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MISCELLANEOUS.

THE NAVAL WAR 1914–1918.

Before publishing a free translation of this volume it is considered that the following article appearing in the Naval and Military Record will be of interest to the service.

The German Naval Staff History—A Monumental Work—Principles of North Sea Strategy—Lure of the Bight.

I. The first volume of the German official history of the naval war is a somewhat disappointing production. It had been announced in a flamboyantly worded publisher's notice as unique among the official literature of the war at sea, in that it sets forth the whole truth and nothing but the truth. "In consequence of the peculiar situation of Germany at the present time, it has been possible, on the one hand, to make use of the entire German naval archives without any reservation whatsoever, and, on the other, to present this material in an absolutely impartial form. The blunders and omissions of German policy and naval strategy are criticized freely and in detail. And therein lies the permanent value of this work in contrast to all the preceding books written by distinguished leaders on the German and British sides, all of which are naturally biased and partial." This promise, however, is not altogether fulfilled. The book is undoubtedly a valuable addition to the naval literature of the war, containing as it does a great deal of new information, especially on minor but not unimportant points. But it suffers from the common failing of all German publications of this type—history and propaganda are so mingled that it is difficult to distinguish one from the other. Himself a naval officer, the author, Commander O. Groos, is very naturally concerned for the reputation of his service. But there should be moderation even in an apology, and when we find the opening sentence reading as follows, "The German Fleet came through the war unconquered by the enemy," the author's credentials as an historian straightway become suspect.

The official history, which has been compiled from the archives of the Marine Amt, under the supervision of Rear Admiral E. von Mantey, is subdivided into five sections: (1) The war in the North Sea; (2) the war in the Baltic; (3) the naval campaign in the interests of Turkey; (4) the cruiser war on commerce (Der Kreuzerkrieg); (5) the submarine war on commerce.

Since the first volume, which deals only with operations in the North Sea during the first four weeks of the war, consists of nearly 300 pages, the complete history promises to be a monumental affair. But the keen student of naval warfare, who is greedy for details, will not quarrel with the author on that account. Commander von Groos has adopted the excellent practice of inserting "Gefechtsberichte" from every ship that took a prominent part in the various operations discussed, and in this way we get many side lights thrown upon matters which the average historian is content to leave obscure because of their apparent insignificance. It is often complained of German writers that they can not see the wood for the trees. This may be true; but the wood after all is composed of trees, and an examination of several typical trees may result in a more accurate appreciation of the wood as a whole than could be gained by a survey of it from a distance.

The author begins by acknowledging that the German Navy failed in its task of protecting German commerce, the failure being due to the refusal of the British Fleet to accept battle save in the vicinity of its own coast. The whole scheme of German strategy had been framed on the supposition that the British Fleet, immediately after the declaration of war, would dash into the German Bight and engage in a futile powder play against the Jade and Weser defenses until the High Sea Fleet, escorted by scores of torpedo boats and submarines, sallied forth to engage it. Incredible as it sounds, this is what the German naval command firmly believed would happen. And this was the one and only contingency for which they were prepared. They had made no provision whatever for strategical developments of another kind. It never occurred to them that the British Fleet had other work to do, that the British Admiralty would attach more importance to such matters as securing the safe passage of our Expeditionary Force and establishing an ocean-wide patrol of the sea routes, than to an aimless attack on the least vulnerable coast line in Europe. It is amazing that intelligent men should have reasoned so childishly.

The only plausible explanation is that given by Admiral von Ingenohl in a memorandum, dated January, 1918, as follows:

> The whole training of our fleet before the war, our tactics, our maneuvers—nay, in part, our shipbuilding policy in certain respects, e. g., the limited cruising radius of our torpedo boats—was influenced by the idea that the decisive battle would be fought inside or within the immediate vicinity of the German Bight. We counted on the British Fleet using its superiority to institute a close blockade of our North Sea coast in order to cut off our imports and thereby restrict our fleet to the narrowest defensive and compel it to accept battle. It is true that in the final years before the war some doubt was manifestd as to whether the enemy would follow this plan, and whether he would not content himself with closing the Channel and the line between Scotland and Norway.

But such doubts were invariably set at rest by pointing out that a blockade of this character would never be recognized by neutral powers, least of all by the United States, and that the British would realize in time that without a close blockade of our North Sea coast they could neither cripple our fleet nor cut off our sea-borne imports. As late as the maneuvers in May, 1914, the commander of the "enemy fleet," Vice Admiral Scheer, expressed in his report the view that the prestige of the British would not allow them to forego a close blockade of the German coast.

Two main ideas, therefore, governed the distribution and movements of Germany's naval force from the beginning of hostilities, and both sprang from miscalculation. The first was that a general engagement would very soon take place and would be brought about by a mass attack on the "wet triangle" by the Grand Fleet; the second was that, failing such a development, the German Fleet must be preserved more or less intact in order to serve as a trump card in the peace negotiations, for no one in the Higher Command anticipated a war of more than a few months' duration. In the meantime the main strength of the fleet was not to be risked, for it was of capital importance to have all the latest and best ships available to resist the expected British offensive. The wording of the Kaiser's famous "Operationsbefehl," issued on August 4, 1914, was as follows:

H. M. the Kaiser has given the following orders for the prosecution of the war in the North Sea:

(1) The aim of the operations is to damage the British Fleet by offensive strokes against its patrols and blockading ships in the German Bight, by a relentless mining offensive right up to the British coast, and, if possible, by submarine attacks. (2) When this campaign of attrition has brought about a reduction in the enemy's strength (ein Krafteausgleich), an attempt must be made by our concentrated fleet to force a battle under favorable conditions. (3) The war on commerce is to be waged in conformity with prize-law regulations. The scope of such operations in home waters to be determined by the commander in chief. Vessels detailed for commerce attack in distant waters are to be sent out at the earliest possible moment.

The historian explains that this order did not meet with the approval of the commander in chief, Admiral von Ingenohl, who saw at once that it would tie his hands and surrender the initiative to the enemy. But his protests—strongly supported by Grand Admiral von Tirpitz—were ignored, and he had no alternative but to obey. Dispositions were made, therefore, for protecting the bight against enemy incursions. The plan, in brief, consisted in establishing during daylight a submarine patrol on the Waugeroog-Helgoland-Amrum line, supported by an interior line of torpedo boats. Three small cruisers were to be spread out fanwise 50 miles from Helgoland, and the battle cruisers were to lie in the Jade estuary with steam up. This scheme was subsequently amplified by posting torpedo-boat patrols 25 to 35 miles seaward of the Elbe Lightship,

by increasing the number of light cruisers, and by adding mine-sweeping flotillas to the bight defense force. Seaplanes were to reconnoiter from their bases at Helgoland, Emden, etc.—Hector C. Bywater.

THE NAVAL WAR, 1914–1918—NORTH SEA, VOLUME I.

PREFACE.

(The following is a free translation.)

The first volume of the narrative of the Naval War, 1914–1918, is hereby given to the public. It treats of the events leading up to those momentous days in July just previous to the beginning of the World War, and the events of this war up to September, 1914, in so far as they refer to the theater of operations in the North Sea.

In treating of so short a period of time in such an extensive volume it has been decided that the early weeks of the war were of very great importance. At the very beginning it must be demonstrated how far the Navy, in view of their lack of war experience of any kind, succeeded in adapting themselves to the actual situations. For this reason, in this, the first volume, the fundamental questions of German conduct of the Naval War will be discussed only in so far as it was influenced by the measures adopted by the responsible authorities of that period. In order to insure a clear understanding of these questions, a short description concerning the nature of naval warfare is essential.

The strategic reasons for the German and British conduct of the Naval War must be presented with reference to the geographic conditions of the theater of operations in the North Sea, and from them must be deduced the considerations on which the German plan of operations was based. This line of reasoning received a serious setback by the unexpected and complete containing of the British Fleet, and the question arises why the naval events of the war, in spite of the large amount of costly war material, and in direct contrast to the engagements immediately occurring on land, hardly assumed the proportions of a skirmish, and, particularly, why the decisive battle in the North Sea expected by all the world shortly after the outbreak of the war did not occur.

The connection between naval warfare and politics should be considered in this respect, though this should only be discussed in so far as it concerned military measures.

For the proper presentation of the events of the war a very minute description of details has been given, that the wide circle of readers

may become familiar with the almost inaccessible reports of the conduct of the Naval War and with the strategy which was so much influenced by each individual event. This is all the more necessary, for until the conclusion of the war, because of military reasons, but little publicity was given to naval activities, what had been planned by those in authority, what effect the general engagements had made on the country and on the enemy. Because of this in later volumes an abridgment of long periods of time into less space can be carried out.

The description is intended for the entire Nation. To the latter, however, the picture of the heroic fight on the sea from the vivid description of individual undertakings and actions will be much more interesting than the abstract account of the problems of the High Command. Gratefully will all Germans think of the heroes who, hoping for Germany's future and greatness, joyfully risked their lives for the protection of the Fatherland. To create a memorial for their deeds, even though but little space has been given to them in this narrative, has been one of the most pleasant tasks of this work.

An almost complete collection of war diaries, battle reports, and war records of the naval archives was available without limitation, but in the reporting of these military activities only an incomplete picture has been drawn of the trend of thought of the leading characters, of the periods of nerve-racking strain, of the uncertainties, of the setbacks and surprises occurring as a result of most important decisions and battle actions. The relatively slight distance from the theater of operations renders difficult a complete grouping of all the activities, and an early description of the facts is necessary for the proper deduction and recording of statements and accounts made by combatants who are still living which in spite of their prejudice will aid materially in the compilation of an historical narrative. Any cooperation for the enlarging and correction of this work along these lines will be gratefully received.

The data concerning our opponent, his forces, losses, views, and inner motives, is essentially less reliable than our own. The publications of our enemies are, though quite the contrary in Germany, restricted by more stringent rules for maintaining military secrets, prestige, and the guarding and carrying out of military preparations.

This fact appears in the official description of the English naval war history which the historian, Sir Julian S. Corbett, is preparing. The first volume of this English work was published during the printing of the German volume. Examination has shown that the German work, which thoroughly considered all previous English press dispatches and literary publications, in particular the book of the commander in chief of the Grand Fleet, Viscount Jellicoe, of

Scapa, in all essential points correctly estimated and described the English conduct of the war. Only in the unessential details does there appear slight deviations.

The period of time described in the foregoing German volume is still too short for one to form correct conclusions as to the development of the German Fleet and the principal reasons for its conduct during the war. Those matters, however, that proceed directly from the events described are thoroughly discussed, together with the accentuation of special achievements being specially emphasized; the reasoning and judgment of those acting under the pressure of responsibility will then be discussed, that the reader may not be led to incorrect conclusions. It must be emphasized, however, that the knowledge that we possess to-day was not at hand in 1914. The Navy did not, as did the Army, after its reorganization in the years 1864 and 1866 and just before the war of 1870–71, pass through a preliminary military school, but the biggest task that could be demanded of it was immediately placed before it. One should not, therefore, view these questions with eyes that were sharpened because of the war. Rather one should endeavor to view them as they then appeared to those in authority. Those who have not undergone such responsibility will hardly grasp what it meant for those on whose actions and orders depended not only their own fate but that of the whole Fatherland and the lives of the men entrusted to them.

"War is the realm of the unknown!" For this reason it seemed necessary to lift the veil that cloaked the behavior of the enemy at that time in order to demonstrate more clearly this period of uncertainty.

In the compilation of this work a separate division has been assigned to each specific activity. A series of articles under the following titles will be issued:

The Naval War in the North Sea.
The Naval War in the Baltic.
The Naval War in the Service of Turkey.
The Naval Cruiser War.
The U-Boat Trade War.

The operations of the Navy in Flanders and in neighboring theaters of war, as well as at Tsingtao and East Africa, are separately discussed.

Each volume is intended to describe to the German people the deeds accomplished on all seas by its Navy and by the men that created and led it and what has been lost by the damage to its sea power. The hard lessons of the war, the recognition of errors, are set forth for purposes of reconstruction. The recalling of the great deeds on the sea may result in reawakening the pride of the Nation and belief that in the future Germany is to arise again!

Tension and Deployment.

The English-German period of tension 1913–14. The Kaiser on the political situation 5 July, 1914. Conclusions reached by the Admiralty staff for the conduct of the High Seas Fleet. Beginning of exchange of information between the foreign office, general staff, and Admiralty staff. More serious estimate of the situation on 20 July. Declaration of the Admiralty staff of 22 July. Entrance of the High Seas Fleet into Norwegian harbors determined upon. Proposal of the commander in chief of the fleet to return home at once and consent of the Kaiser thereto. Home voyage carried out against the wish of the imperial chancellor. The report of the German naval attaché in London of 28 July. The home voyage of the Kaiser and the High Seas Fleet. Deployment of the First English Fleet in the North Sea. Indirect preparations for war in England since 1904.

Preliminary work of operation in the event that England might remain neutral. Russian mobilization, German order "prepare," English Fleet deployment. War distribution of the German and English Fleets. Deployment of the German High Seas Fleet in the North Sea. Maritime restrictions by political attempts at understanding.

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Conclusions a posteriori of the fleet command. Lack of cruisers for the offensive. Operation plans of the commander in chief of the fleet.

Attack of *U–20* and *U–21* against the line Peterhead-Egersund and simultaneous procedure of *U–22* against the Humber 15–21 August, 1914. Consequences for the possibilities of operations of the fleet. Transition to minor warfare. Attack of the small cruisers *Stralsund* and *Strassburg* with *U–19* and *U–24* on the Hoofden 17–19 August, 1914.

Attack of the small cruisers *Rosbock* and *Strassburg* and the Sixth Torpedo-boat Flotilla near the Dogger Bank 21–22 August, 1914.

Mining expedition of the *Albatross* and *Nautilus* against Tyne and Humber 23–26 August, 1914. The effect of the U-boat peril on the behavior of the large battleships.

28 August, 1914.

The construction of the protection of the German Bay. Cruiser and torpedo-boat attacks on the outpost line. The damages of U-boats, aeroplanes, and mines in Helgoland Bay and outside the river mouths. New fundamental principles for the protection of the German Bay.

The first reports of the enemy on 28 August. The measures taken by the commander of the scouting vessels and by the Fleet Command. The measures of the chief of the Second U-boat Flotilla. Alarm of the coast works on Helgoland and Wangeroog.

Fight of *G–194*, *G–196*, and the Fifth Flotilla. Capture of the *Stettin*. The fights of the Third Mine Sweeping Division. The fights of the *Frauenlob*. The sinking of the *V–187*. The fights of the other boats of the First Flotilla. Second fight of the *Stettin*, Behavior of S. M. S. *Hela* and of the Fifth Flotilla.

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First fight of the *Strassburg*. The sinking of the *Mainz*.

Order to the German battle cruisers to go out. The behavior of the German U-boats. Opinion of the situation up to 1.30 p. m. of the command.

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At the scene of the sinking of the *Ariadne*. Attack of the German battle cruisers and reestablishment of the German outpost lines.

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The first cruise of the Grand Fleet. The second cruise. The attack of *U–15*. The effect of the appearance of German U-boats. The first attack in the southern North Sea (third cruise). *U–21* and the Grand Fleet. Conclusions of the German Fleet Command on the results of the U-boat scouting expedition. The fourth cruise of the Grand Fleet. Behavior of the British Fleet during the battles of 28 August.

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1. Period of Tension and Deployment.

The German Fleet came out of the World War unconquered by the enemy. The High Seas Fleet won immortal laurels in the only great battle between men-of-war of the first line in the main theater of operations in the North Sea. Bidding defiance to the powerful pressure of an iron blockade ring, the navy was able to protect the sea boundaries of the German Fatherland, to cover the flanks of our army fighting in Flanders and Courland, and simultaneously succeeded in accomplishing the most difficult work in petty and commercial warfare in a heroic manner with the aid of that newest weapon, the U-boat. Honorably did our cruisers in foreign waters give battle on all seas, and after glorious deeds, staunch in their loyalty and with colors flying, succumbed to superior force and were sunk. However, there was one problem which the fleet could not solve, that of giving to our commerce the freedom of the seas, for the enemy, in spite of their double strength, took up a position under their own coasts and did not seek the battle on which we counted, but on the other hand avoided it.

A pet creation of the German people, a testimonial of German unity and greatness, manned only by Germans, this fleet was a part of the German people. During the war, too, the fleet was in close

contact with the German people. As all the naval forces were based on home ports, it was equipped and repaired there, and consequently they felt more strongly the inner political events than they did the doings on the battle front in Flanders. When the mother country, so fond of its naval forces, began to waver, the fleet, too, experienced the same feeling and was shaken. The powerful structure which every shot of the enemy had only served to strengthen began to break up. The unconquered fleet, after splendid deeds of heroism, after the hardest kind of work, went to pieces—a frightful tragedy!

Since the passage of our first naval law, not two decades before the beginning of the war, our fleet was developed before the eyes of the whole world according to a fixed plan. Its development in 1914 was in nowise completed, but the most difficult period of its growth seemed passed. The fleet, a treasure of peace time, was already so strong that England, in spite of her envy of the powerful growth of German trade, began to feel the vital danger which an attack on Germany meant for their own country. Therefore they hoped for a change in politics.

The storm clouds resulting from the Moroccan dispute and the complications of the Balkan War led to the adoption by the English Fleet of a series of extraordinary measures following one after the other, which in view of the strong economic competition and political opposition did not escape the attention of the German people and which were watched with closest attention by the Admiralty staff and the Reichs-Marine-Amt.[1] On 9 May, 1913, the chief of the Admiralty staff was able to inform His Majesty the Kaiser that the distribution of the English Fleet had again assumed a peaceful aspect. After the unrest of this year followed the period of inaction which with the increasing strength of our fleet and to a certain extent political good fortune might well have led to complete tranquility. In the first place, however, the danger was still so great that the political relations between Germany and England in no way justified the hopes that were entertained by many responsible and high officials. From this point of view, the visit of an English squadron to Kiel at the end of June, 1914, the first for a long time, was considered in many quarters as a visible sign of the hoped-for Anglo-German rapprochement. The German naval circles concerned quickly learned through unmistakable proof, however, that in spite of the friendly intercourse there was an endeavor on the part of the English to use this visit as a cover for a thorough investigation of our naval status, and especially in regard to the Kaiser Wilhelm Canal and the number and performance of our U-boats. It was known that the widening of the Kaiser Wilhelm Canal, which

[1] Imperial Navy Department.

permitted it to be navigable even for large battleships, was to be completed late in the summer of 1914. Early in that year the intelligence service had learned that England intended to place people in all German harbors, in Sönderburg, for example, with instructions to report by telegraph any movement of warships.

On 23 June the English squadron, consisting of a division of the most modern battleships, namely, *King George*, *Centurion*, *Ajax*, and *Audacious*, as well as the small cruisers *Southampton* and *Birmingham*, entered Kiel, but their stay, which was intended to be of seven days' duration, was suddenly interrupted by the announcement of the assassination of the arch duke and duchess, heirs to the Throne, on 28 June.[2]

Although this frightful deed deeply stirred the feelings of the educated world and led very soon to a series of momentous decisions, a war between the Great Powers was not unavoidable or even probable. In discussing the general political situation as well as the measures to be taken by the navy in the interim His Majesty stated, on the evening of the 5th of July, in Berlin, one day before his pleasure trip to Norway, to the representative of the Admiralty staff, Capt. Lenker, for communication to his superior authority, the following:

"At noon on 5 July the Austro-Hungarian ambassador had asked him whether Germany, in the event of a conflict between Austria-Hungary and Russia, would fulfill its alliance pledges. His Majesty agreed to this, but did not believe that Russia would intervene for Servia, who had polluted herself by the assassination. France, too, would hardly allow it to result in war, as she did not have heavy artillery for field use. If, however, a war against Russia and France was not probable, yet its possibility must always be kept in mind from a military point of view. In any case, the High Seas Fleet would make its intended trip to Norway as planned for the middle of July, and he, too, would make his trip to Norway as planned."

The question whether the chief of the Admiralty staff, then on leave would be recalled the Kaiser denied. England was mentioned in no way.

On the next morning, immediately before beginning the trip, the Kaiser stated quite the same thing to Admiral von Capelle, whom he had ordered to the New Palace as acting secretary of the navy, as Grand Admiral von Tirpitz was also on leave. Rear Admiral Sonchon, commanding the Mediterranean division, who, with the ships *Goeben* and *Breslau*, was in Patras, and the commander of the

[2] The departure of the English vessels was accompanied by a universal exchange of friendly signals. Among others, the English flagship signaled: "Friends today, friends in future, friends forever."

cruiser squadron, Vice Admiral Count von Spee, who, with the ships *Scharnhorst* and *Gneisenau*, had started on a voyage to the South Seas from Tsingtau, were thereupon informed by the Admiralty staff that the political situation was somewhat tense. The latter received the order to wait in Truk or Ponape, both being anchorages in harbors with good cable connection, until the situation cleared up again. Of the other ships abroad only the S. M. S. *Eber* was informed, because this ship was on the point of undergoing boiler repairs of eight weeks at Kapstadt. Lastly, the conversation of an agent of the Reichs-Marine-Amt with the minister of war on 7 July showed that the latter considered the current situation calmly, did not expect a clarification before three weeks, and then was going on several weeks' leave. Nevertheless it was obvious, from a purely maritime standpoint, that the summer trip of the fleet to Norway ought to be given up at the outset and the drills carried out in home waters. It was especially significant that all the naval forces in England, instead of the usual summer maneuvers, were engaged in a mobilization drill, which was to be concluded by a fleet review before the King of England in Spithead roadstead on 16–20 July. The English press mentioned this review as a "trial mobilization carried out after half a year of preparation which would show the maximum strength of the English naval forces." The reserve organizations were also placed in service, numerous reservists being called. With this completion of the preparedness of the fleet at the end of 1913, the British Navy was in the summer of 1914 fully ready for attack. How far the English preparations for war were accustomed to go in times of political tension are still easily recalled from the events of the summer of 1911 and November, 1912. While the German Fleet was demobilizing reservists at the conclusion of the fleet maneuvers and which demobilization was completed according to plan by the end of September, the English battleships lay ready for battle in the Firth of Forth, camouflaged English torpedo boats were off the Thames, the reserve corps of the fleet were hastily mobilized and large coal shipments were seized and, at extraordinary expense, rushed by day and night to the harbors on the east coast. German counter measures were then considered by the imperial chancellor as unnecessary and impracticable. Not until later was it known in what danger our fleet was placed in 1911 when it lay in double rows in Norwegian harbors.[3]

Now the situation was repeated. Again the tension as in the summer of 1911 came at a time of the year when the German and British Fleets were at their highest point of efficiency, this preparedness being, however, on the English side considerably increased by

[3] Appendix 13. "Preparations for war of English Navy, 1911 and 1912."

the trial mobilization. Because of this even the reserve units were in the same state of preparedness as the vessels of the first line.[3]

These measures had not only been unanswered on the part of the Germans but they were on the point of still further limiting the battle preparedness of the High Seas Fleet by sending it to Norway as planned. In the event of a sudden outbreak of hostilities while there they might be placed in a highly unfavorable strategic situation, being so far from their bases and without torpedo boats. In view of the increased preparedness of the entire British naval forces, this thought could still less be put aside after the well-known statements of the English Fleet that the Germans would wake up some day and find their fleet destroyed.[4] No doubt could exist that in this situation an order for mobilization on the part of the English would mean the same as an opening of hostilities. It must also be taken into account that the first British cruisers appearing in German waters would bring the declaration of war itself.

Therefore, the chief of the Admiralty staff, Admiral von Pohl, on 5 July, in addition to the imperial order that the High Seas Fleet should begin its trip to Norway according to program on 15 July, made this reservation: Only if at that time it is quiet again. Otherwise it would be extremely hazardous to separate the fleet from the mother country. Still he believed under the circumstances that if in the meantime the tension eased down that he should yield to the wish of the controlling political authorities that everything on our part that would make the situation more acute should be avoided. Therefore, on 13 July, by agreement with the foreign office and the Reichs-Marine-Amt, he telegraphed the consent of the Kaiser to the regular cruise of the fleet to Norwegian waters. Moreover, the fleet was to stay in the Skagerrak until 23 July; it seemed then still possible to recall it at the right time. There were at the time no reasons against carrying out the cruise unless the political situation should suddenly change for the worse. The beginning of the cruise was decided upon.

From the further exchange of information between the foreign office, general staff, and Admiralty staff, it followed that the political leaders believed they could count upon a localization in the event of an Austro-Hungarian-Serbian conflict. Also, the trip of the French President Poincaré to Petersburg, as well as the public discussions

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[4] In the first chapter of his "Memoirs" the English admiral, Lord Fisher, publishes a letter written by him to the King in which the following sentence is contained: "That we have eventually to fight Germany is just as sure as anything can be, solely because she can't expand commercially without it." Fisher then adds that this letter was the result of a confidential conversation with the King, in which he had insisted that we should "Copenhagen" the German fleet at Kiel a la Nelson, and lamented that we possessed neither a Pitt nor a Bismarck to give the order." (Nelson attacked the Danish fleet on 2 April, 1801 directly under the Copenhagen fortifications.)

occurring at the same time in Paris concerning the alleged unpreparedness of the French Army, lent color to the belief that the situation was not to be regarded as critical. Finally, in expectation of Serbia yielding, a general relaxation of the situation was to be counted upon when, with the giving out of the measures taken by Austria-Hungary against Serbia on 20 July, the picture suddenly changed and gave a serious aspect to the situation. On this day the following telegram went from the Kaiser to the secretary of the foreign office:[5]

"His Majesty asks Your Excellency to consider whether at this time the general directors of the Hapag and of the North German Lloyd ought not to be informed privately and in strictest confidence by the Ambassador in Hamburg to expect the Austrian ultimatum on 23 July. With reference to unforeseen and perhaps very rapidly occurring consequences, it appears desirable to His Majesty that the two great lines should be informed in good season, so that they can make arrangements at the right time and give orders to steamers abroad."

The secretary of the foreign office, with the consent of the imperial chancellor, granted this appeal. At the same time the fleet received the following telegraphic directions from the Kaiser: "His Majesty orders the keeping of the fleet together until 25 July, so that orders for breaking off the cruise may be rapidly carried out. Entering Norwegian harbors shall only be carried out on receipt of special permission direct from his Majesty."

This order struck the Admiralty staff and foreign office with all the more astonishment, for in the case of the latter nothing was known of the contents of the Austro-Hungarian note which was to be delivered in Belgrade on 23 July and because a decision was not expected before 25 July in any case. Whether the successful English trial mobilization carried out in the meanwhile or the uncertain situation was the cause of this order is not certain. The chief of the Admiralty staff who, as well as the secretary of the Reichs-Marine-Unit, the chief of the general staff and the minister of war, were on leave, declared on learning of the order that in any case a return of the fleet to the Baltic was now necessary, though undue haste should not be shown. In a conversation with the acting chief of the Admiralty staff, Rear Admiral Paul Behncke, Secretary of State von Jagow suggested proposing to the Kaiser an earlier return home on account of the difficulties of maintaining communication during the home voyage, but he came to no decision. Moreover, he was of

[5] "German documents at the outbreak of war." (Deutsche Verlagsgesellschaft für Politik and Geschichte, Charlottenburg, vol. 1, No. 80. (2) Hapag—abbreviation for Hamburg American Steamship Co. (Hamburg-Amerika Packetfahrt-Aktien-Gesellschaft).

the opinion that Servia's behavior was dependent on Russia. He took a rather serious view of the situation, appeared, however, to count upon a peaceful outcome, but he did not wish to prophesy. If it should come to war between the great power on the mainland England would first wait, and her behavior would depend on the course of events. This view was decidedly contradicted by Admiral Behncke. From a naval strategical standpoint it was certain that an *immediate* attack by England was to be counted upon, otherwise its means of maintaining over a Germany victorious on the mainland a political and economic pressure would not be sufficient. He maintained that if it came to war, such a development would be desirable for the Navy, as it would enable it to recover the lead which the English had already attained through their trial mobilization.

Meanwhile the imperial chancellor had wired the foreign office the order given by His Majesty to the fleet, and that if the ultimatum was rejected aggressive fleet movements could be ordered in time from Balholm. On the other hand, in case of an entanglement a bad position of the fleet would be serious in its consequences. The foreign office would have liked to have been in communication with the Admiralty staff in regard to the military side of the question, so as to obtain a report from Count Wedel, on the imperial yacht *Hohenzollern*, bearing, besides on the military, also on the political situation.

In view of the danger which was fortunately passed in 1911, and in face of the greatly increased preparedness of the English Fleet for battle due to the trial mobilization, the acting chief of the Admiralty staff on the afternoon of 22 July personally made the following statement at the foreign office:

"If the possibility of an imminent declaration of war by England is considered, then from a military standpoint an unexpected attack by the English Fleet is to be counted on."

"Our fleet, on account of its great numerical inferiority, must not be exposed to this in any way."

"As soon, therefore, as the possibility of an outbreak of war with England within 6 days is certain the fleet must be recalled."

The chief of the naval cabinet, Admiral von Müller, on board the imperial yacht *Hohenzollern*, was also informed of this statement by telegraph for "personal instruction."

Concerning the reception given the statement at the foreign office, Rear Admiral Paul Behncke reported as follows:

1. "Secretary von Jagow was apparently satisfied by the written position assumed by the Admiralty staff and remarked that the decision lay in the sphere of politics. He personally did not believe in a rapid development and still less in an unexpected attack by Eng-

land under the prevailing conditions. The responsibility in this situation is, however, very great. He observed that if he were in His Majesty's place he would have the fleet enter Norwegian ports, and indeed very soon. However, he seemed personally not to wish to assume any decisive position. He remarked that he would telegraph the opinion of the Admiralty staff to the imperial chancellor.

2. "Assistant Secretary Zimmermann raised the point that unusual movements of our fleet would call forth similar measures on the part of the English. As far as the situation and sentiment of the Triple Alliance, and especially in England, are concerned, he did not believe that Mr. Churchill, whom he believed capable of this sudden attack, could obtain the approval of the English ministry.

3. "I (Admiral Behncke) consider that the movements of the English fleet, which on 7/27/14 plans to go from Portland to its home ports for shore leave, would constitute a good scale for measuring the English view of the situation."

Admiral von Pohl was entirely in accord with the statement given out. Only he gave it special emphasis by the attitude he assumed in regard to the report sent to him. "The Admiralty staff must keep in mind that under no circumstances must the fleet be brought into a dangerous position. As soon, therefore, as only the possibility occcurs that England will oppose us the fleet must, as I have already stated before, be withdrawn, even though by this change in the regular movements the situation would be made more acute.

I venture, in opposition to the foreign office, that in the possibility of a prospective attack on our fleet I even see a chance which would be enough to cause England to force the situation to a head and immediately and without loss of time to take the side of our opponents.

Such a prospect would make the English Government inclined to accept Churchill's plans. Accordingly extreme caution is needed."

The Kaiser, too, was then against the entry of our fleet in Norwegian waters, as is evident from the following telegram sent on 23 July to the Admiralty staff from Balestrand:

"Am of the opinion that on account of the political tension distribution of the fleet in Norwegian harbors is not permissible, and that accordingly orders for return home had better be given at once. Request conference with foreign office and telegraph to me their proposal. I myself intend, if nothing occurs to prevent, to enter Swinemünde August 1."—*Wilhelm I. R.*

At the conference which Rear Admiral Paul Behncke held thereupon with Assistant Secretary Zimmermann on 23 July, at 5 p. m., he learned that the telegram of His Majesty had crossed with one sent on noon of the same day to Balholm, presenting the situation.

From the foreign office Count Wedel was, by agreement with the chief of the naval cabinet, Admiral von Müller, to report as follows:

"Note will be delivered 23 July, departure of the ultimatum 25 July, evening. Foreign Office certainly does not believe that anything could happen immediately, especially as Poincare will not return to France until 31 July. According to a report of the Admiralty staff, the English Fleet will separate at Portland 27 July. In case special measures be taken before that time with our fleet this would call forth great unrest, which must be considered as hazardous. It is suggested that nothing special be done with our fleet, and that we await the action of the English Fleet. In conclusion thereto follows yesterday's statement of the Admiralty Staff."

Assistant Secretary Zimmermann mentioned that the imperial chancellor had qualified as good in all respects the quiet attitude of the foreign office.

Thereupon the Admiralty staff decided to take upon itself in the matter of policy the heavy responsibility for the distribution by twos and threes of the fleet in Norwegian ports. The following telegram went immediately to His Majesty:

"According to the view of the situation presented to Your Majesty today by the foreign office, I do not consider the High Seas Fleet endangered at present. Recommendations after conference with foreign office are to abbreviate putting into port and sojourn as much as possible in case the political tension again increases. Admiralty Staff."

This decision did not meet with the full approval of the Chief of the Admiralty staff (then on leave), who, in a marginal comment on the aforesaid report, took the following stand: "It would have been more in keeping with the seriousness of the situation if the fleet had been recalled. This was opposed by the fact that by the unusual recall the political situation would be made more acute. The proposal of the Admiralty staff should therefore be adhered to, but all signs that might possibly throw light on England's attitude should be closely observed. If the possibility that England might come out against us grows any stronger, then the fleet should be recalled."

Meanwhile the Kaiser had adopted the proposal of the Admiralty staff, and on 25 July had given orders to the fleet: "Enter Norwegian harbors: arrange shore leave so that vessels can leave immediately."

Not until the flagship entered the Sogne Fjord did the delayed Austro-Hungarian note to Serbia become known to the commander of the fleet. In opposition to the Admiralty staff, and without definite communication with the foreign office, the commander of the High Seas Fleet, Admiral von Ingenohl, on whom naturally the

military responsibility rested in the first place, regarded the danger to the fleet so serious that he considered immediate return home as urgent. Concerning the steps taken by him in this direction, he made the following statement later at an official investigation for the purpose of clearing up the records:

"According to my recollection, at the first announcement I urgently requested His Majesty the Kaiser, in Balholm, to immediately dispatch the fleet to home waters, pointing to the experiences in the summer of 1911. Wilhelm, His Majesty, complied immediately or later, I do not recall. I got the impression, however, that the Kaiser as well as those around him were very disturbed over the political situation as it presented itself after the note to Serbia and the thereafter resulting reports on the political events. This was reflected in the decision of His Majesty against the advice and the urgent request of the imperial chancellor to leave the Norwegian coast and return home.

"I received the order for the return of the fleet verbally on board His Majesty's yacht *Hohenzollern* on 25 July, in the evening at 6 o'clock, after the news of the mobilization of the Serbian Army had arrived and with it the direction to proceed with the entire fleet to the Baltic, so that there, in case there should be war, it could strike the first blow against Russia. When I in an urgent and serious manner pointed to the very obvious but certainly to be expected possibility that England might take part in the war and that primarily this chief danger had to be reckoned with, for which reason the main part of the fleet—at all events all large battleships—ought to go to the North Sea, the Kaiser answered me very positively that an attack by England in this war was quite out of the question.

"In spite of repeated representations I was only able to obtain permission that some units of the fleet should be dispatched to their home ports, and that for the reason that hereby the work of mobilization would be essentially facilitated and accelerated. In this way it was at least made possible that the greater part of the large battleships and scout vessels could go to the North Sea."

The justification for this decision was quite difficult on the part of the Kaiser and on that of the fleet commander. While the fleet commander asked for the return home primarily with reference to England, for the Kaiser merely insuring the Baltic against Russian attack was sufficient. The order of the Kaiser was much regretted at the foreign office; it was hoped that the imperial chancellor would succeed in dissuading His Majesty from the home voyage of the fleet, especially, too, as there was reassuring news at hand concerning the attitude of the English Fleet. The opinion was that Sir Edward Grey, with his statement, "A war of the Four Great Powers might easily arise, however," had given distinctly to understand that there

was no danger of war for England. In Paris the agitators Poincare and Viviana were away. In short, things looked pretty well. The representative of the latter had stated that the conflict would be localized.

This judgment of the English position appeared to be confirmed by the following telegram from the German naval ataché at the embassy in London, Lieut. Commander Erich von Müller: "England intends a common action of Germany, France, and Italy for the pacification of Russia and Austria-Hungary. The King of Great Britain and Ireland stated to Prince Henry of Prussia that England would stay neutral in case war should break out between the continental powers. Fleet has according to program dismissed reservists and given the crews liberty."

Consequently the chancellor at once sent the following telegram to the Kaiser:[6]

"The chief of the Admiralty staff of the navy informs me that Your Majesty, influenced by a Wolf telegram, has given orders to the fleet for hasty preparation for return home. Admiral von Pohl would like to submit to Your Majesty meanwhile the reports to Your Majesty of the naval attaché in London and of the confidential agent in Portsmouth, according to which the English Navy is taking no unusual measures but rather carrying out the earlier planned distribution according to schedule.

"As also the reports made up to this time by Your Majesty's ambassador in London show that Sir Edward Grey, at present at least, is not thinking of a direct participation of England in an eventual European war and will work for the most feasible localization of the Austro-Hungarian-Serbian conflict, I venture in all submission to recommend that Your Majesty will not for the present order any premature return home of the fleet."

The Kaiser denied in marginal observations to this telegram that the consideration of a Wolff telegram had caused him to give his order, but rather that the report of the mobilization in Belgrade had been the motive. "This may bring about the mobilization of Russia, which will result in Austria's mobilization. In this case I must have my forces on land and sea together. There is not a single ship in the Baltic. If Russia mobilizes, my fleet must already be in the Baltic; therefore it is going home." At the same time the Kaiser pointed out that for the mobilization of the English Navy no "special" measures were in any way necessary. "It is already ready for war, as the review has just shown, and has mobilized."

To a second appeal of similar tenor from the imperial chancellor on 26 July,[7] pointing to the alleged dismissal of reservists on the

[6] The German documents at the outbreak of war, I, No. 182.
[7] German documents at the outbreak of the war, I, No. 231.

British Fleet, the Kaiser observed as follows in the margin: "There is a Russian Fleet! In the Baltic there are five Russian torpedo-boat flotillas that are on practice cruises and which all or in part could be before the Belt in 16 hours and could blockade it. Port Arthur ought to be a lesson! My fleet has sailing orders for Kiel and there it is going."

These reasons for the decision of the Kaiser were summed up again as follows in a telegram of 26 July:[8]

"I gave the order to the fleet for hasty preparation for the return home not on the basis of a Wolff telegram (as the imperial chancellor has imputed), but after consideration of the whole situation and possible eventualities. I was all the more induced to take this action since I did not have at hand a report on the situation from the foreign office, and even the contents of the Austrian ultimatum reached me through the Nordeich News Service and not via official channels.

"Apart from the fact that the English Fleet needed to take no further measures, since, as shown by the review, it was lying all ready for war in its home ports, we have to reckon with the Russian Fleet, which, in case Russia mobilizes against Austria with just her ships now in service, can appear off our Baltic parts in a very short time.

"In order to meet the possible danger that my fleet, scattered among the ports of Norway, might be surprised by war far from its base, I gave orders yesterday afternoon, after I learned from telegram 127 that the Serbian mobilization was already in full swing, that the fleet after finishing the necessary coaling would assemble and start on the return trip home."

Meanwhile the Admiralty staff had received reliable reports from the Medway district that no measures were being taken there which could be termed preparations for war. Consequently it again on 26 July to the fleet: "Reports concerning England's attitude seem reassuring. If going out has not been ordered, recommend waiting. France and Russia still undecided. We will give further information." As such it reported as follows on the next day: "Situation is considered reassuring. England will mediate. It seems that France is shrinking from war. Russia still undecided." But almost at the same time as that of the sending of this telegram there came the following report from the naval attaché in London sent 26 July: "Admiralty has ordered that men must not be given liberty. First Fleet Portland, other vessels base ports." This announcement followed late in the evening by the report: "According to news reports the First Fleet, after coaling, is to proceed at noon to-day to the North Sea."

[8] German documents at the outbreak of war, I, No. 231.

This changed the entire face of the situation, although the actual exit of the fleet, according to further reports from the naval attaché, was doubtful. On 28 July, at 6.20 p. m., the following telegram came from him: "Admiralty will keep ship movements secret. Second Fleet is fully manned. Schools at military ports closed. Precautionary measures taken for recall of those on leave. First Fleet appears from direct information to be still at Portland; a submarine flotilla has left Portsmouth. It is to be assumed that the Admiralty is preparing an inconspicuous mobilization." The report on the Second Fleet was simultaneously confirmed by a confidential agent in England. The Kaiser and the High Seas Fleet were immediately informed of all this.

A detailed presentation of the suddenly changed situation and of the complete preparedness of the English Fleet for battle was given in the report of the attaché on 28 July. It was as follows:

"As already reported by telegraph, the English Fleet is making preparations so as to be ready for any event. In general outline the present distribution is as follows: The First Fleet is assembled at Portland; the battleship *Bellerophon*, which was undergoing repairs at Gibraltar, has been recalled. The vessels of the Second Fleet lie in their base ports; the full crews are on board, and the land schools have not been reopened.

"The ships of the Second and Third Fleets have taken on coal, munitions, and supplies, and lie at their base ports. As a consequence of the first completed reservist practice, they can be manned with a comparatively accustomed personnel more rapidly than before. The Times says, 'Within 48 hours.'

"The destroyer flotillas and patrol flotillas and the U-boats are at their stations or on the way there.

"No leave will be given, and those officers and men on leave will be recalled.

"In the military ports and at shipbuilding works there is feverish activity; besides this, special precautionary measures have been taken, all arsenals, magazines, oil tanks, etc., being put under guard (newspaper report from Portsmouth).

"Vessels in course of repair at shipyards, especially destroyers, are hastily being made ready. Night work has been introduced to an increased extent. (Reliable private information.)

"The Mediterranean Squadron, according to a newspaper report, has left Alexandria. It is said to be now at Malta.

"All vessels and groups have been ordered to keep clear for action at all times.

"Outwardly the greatest tranquillity is being preserved in order not to cause unrest by alarming reports from the English Fleet.

"Movements of ships which are usually published daily by the Admiralty have been kept secret since yesterday.

"According to a report of the secretary of the English secretary of foreign affairs the First Fleet will stay in Portland for the present. He maintained that only orders forbidding leave and for recall had been issued.

"Therefore the above preparations are evidently the work of the Admiralty. As far as the result is concerned it is immaterial who ordered them.

"According to a statement made by the King to Prince Henry of Prussia, England intends to remain neutral in the event of a European war.

"As this is fitting in view of the geographical and political situation of England, English neutrality might well be counted upon.

"In the further progress of warlike events, especially if the arms of Germany are successful on land, an English interference must be taken into account. Hence will come the chief problem for our fleet."—*Erich von Müller.*

(To be continued.)

THE ARMISTICE OF 11 NOVEMBER, 1918. By André Tardieu.

Source: L'Illustration, 6 November, 1920.

(A translation.)

The armistice of 11 November, 1918, was, on the part of Germany, a surrender without conditions. This was the significance it bore, at the time of its signature, both in the minds of those who imposed it and of those who were subjected to it. This was the significance given it by the four months of military and political history of which it was the conclusion.

Germany and the Armistice (15 July–23 October, 1918).

In the first week of July, 1918, Admiral Hintze, nominated by William II secretary of state in the imperial office of foreign affairs, desired, before assuming the duties of his post, to inform himself exactly concerning the military situation and left for the front. At Avesnes he met Gen. Ludendorff and put to him the following question:

"Are you sure that, during the course of the present offensive, you will decisively and finally defeat the enemy?"

Gen. Ludendorff replied without hesitation:

"My reply to your question is unconditionally, Yes."

Everything at this date seemed to justify the assurance of the first quartermaster general of the German Armies. In March an overwhelming attack had broken the army of Gen. Gough and thrown the Allies back to the very gates of Amiens. In May another thrust had broken the French lines at Chemin des Dames and forced the enemy back to the vicinity of the Marne. Paris bombarded, testified to German victory. Numerous English and French prisoners and important material had been captured. The German commandant, through an active propaganda, predicted to the troops a final offensive, an offensive leading to peace. To make good his claim he had at his disposition a powerful machine: 1,456 battalions, 266 more than in 1914, constituting 207 divisions. Of these 207 divisions 130 were at the front and 77 in reserve. Of the latter, only 20 had been recently retired from battle on account of fatigue: 26 had been reorganized, and 31 were fresh. The offensive was launched on 15 July, before daybreak, in the direction of Reims. From the 17th on it was, excepting in the south, crushed between our first and our second lines.

After the 18th the Mangin and Degoutte armies made a counterattack upon the German flank. On the 19th the enemy recrossed the Marne. On 4 August they fell back upon the Vesle. On the 8th, farther north, not far from Amiens, three German divisions, on the eve of an Allied attack, fell back with disorder almost amounting to a rout. Keep these events well in mind, for victory and the armistice had their first impetus from them.

On 13 August numerous visitors arrived at Spa at German general headquarters. Stationed there were the Emperor, the crown prince, Marshal Hindenburg and Gen. Ludendorff, Count Hertling, chancellor of the Empire, and Admiral Hintze, minister of foreign affairs. On the following evening were expected the Emperor of Austria and his minister, Count Burian. A crown council was to take place on the 14th. During the evening Admiral Hintze drew aside Gen. Ludendorff and, as he had done a month earlier, questioned him upon the situation. The general replied:

"In July I told you I was sure that during the course of the present offensive I would crush the fighting spirit of the enemy and force them to peace. I now no longer feel that certainty."

"But then," replied the minister, "how do you conceive the continuation of the war?"

"We remain capable, through a defensive strategy, of paralyzing the fighting spirit of the enemy and thus little by little forcing them toward making peace."

In a word, instead of the crushing vistory counted upon in July the German commander no longer hoped for success except through

lassitude of the adversary. The grand council convened on the following day and Gen. Ludendorff there expressed the same diminished expectancy.

"The great offensive," said he, "is no longer possible. We must maintain a defensive strategy combined with local offensives. Thus we may keep the hope of finally paralyzing the fighting spirit of the enemy."

The Emperor drew from the situation this conclusion—that it was best to "watch for a favorable moment to come to an understanding with the adversary." His chancellor agreed with him; he recommended "cautiously awaiting an opportune moment to begin overtures for an entente." This opportune moment will be after the "first success upon the western front." Therefore bide your time and await events. Admiral Hintze, less confident in the possible success of the defensive strategy, desired to have authority given him, without further delay, to "begin peace overtures through diplomatic measures." By this he meant "a reduction in the aims of the war acknowledged up to the present time." This proposition was unanimously opposed. Marshal Hindenburg declared:

"We shall succeed in holding our ground upon French soil, and thus the enemy will ultimately bend to our will."

In a word, the cry was no longer, as a month earlier, "Nach Paris!" But success in France was counted upon. They expected to remain on French soil. While remaining there negotiations were in preparation from which would result advantageous peace. Consequently, the authority given Herr von Hintze for the preparation of these diplomatic terms was strictly limited to "maintaining the war aims already determined upon with a view to victory," and the awaiting of a favorable occasion which might insure the greatest degree of success.

From 14 August to 20 September events took a turn, both military and political, which threw this state of mind into disorder. The anticipated "local successes" did not occur. On the contrary, on five different occasions during the course of five weeks it was the Allied troops who carried off victory—a Franco-British attack which before Amiens threw the Germans back upon their old Chaulnes-Ribécourt front; a Franco-British attack which from 18 August to 26 August, advanced as far as the Bapaume-Péronne-Nesle-Noyon front; a Franco-British attack which from 30 August to 10 September threw the enemy from Vesle on the Aisne, and, farther north, back to the vicinity of the Hindenburg line; a Franco-British attack which from 18–22 September broke this line between Cambrai and Saint-Quentin; a Franco-American attack which reconquered the St. Mihiel salient. On the 20th of September the enemy had lost almost the entire terrain that they had won from March to June.

Their forces suffered greatly. They had engaged 163 divisions, 75 of them two or three times. There remained 68 divisions in reserve—that is, 9 less than in June—out of which 21 only were fresh—that is, 10 less than in June. To maintain, in the absence of sufficient reinforcements, the effective of these units, it was necessary to break up 16 divisions.

At the same time political difficulties began to occur. On the evenings of 14 and 15 August, Emperor Charles and Count Burian, at Spa, expressed the opinion that steps should be taken toward securing peace, directly and at the earliest possible moment. They had been cognizant of the conclusions reached by the German Crown council on the 14th. The Emperor, the chancellor, and the generals protested against the suggestion of their allies. They believed, in the first place, that such steps should not be taken until later, and in the next place that negotiations should not be conducted directly, but through an intermediary who was neutral. The Austrians departed, unconvinced, and on the 21st telegraphed a plan for direct appeal to the belligerents, at the same time attempting to obtain in this plan the support of Bulgaria and of Turkey. Great excitement followed in Berlin and at Spa. The matter was discussed for a period of three weeks. From the 3d to the 5th of September Herr von Hintze and his assistant secretary of state, Herr von Stumm, went to Vienna to preach resistance. They asked for a delay long enough at least for the German Army to complete the strategic retreat which had been begun. Hindenburg intervened, on the 10th, by a telegram disapproving the Austrian plan of an appeal direct as "prejudicial to our arms and to our people." On the other hand, he favored the proposition to have "a neutral power negotiate an immediate explanation." As compared with the decisions of 14 August, note the changes—peace is not to be asked for directly, but a neutral is begged to immediately propose it. The Austrians remained obstinate, however, in their opinion, and on the 14th their note was issued. Germany in the meantime looked about for a neutral who would undertake the commission. The quest was slow and vain. On the 21st of September Ludendorff telegraphed to main headquarters that they could get in touch with the United States. The period was one of confusion and anxiety. The anxiety and confusion was augmented on the 26th by the news that Bulgaria intended to conclude a separate peace. It was decided to send troops there. But it was already too late, and, on the 29th, the Bulgarian armistice was signed at Saloniki. Chancellor von Hetling, in the ministerial council of 3 September, declared we must say to our enemies:

"You see that you can not conquer us—but we are always ready, as we have already declared upon several occasions and without equivocation, to conclude a peace with honor."

The succession of Allied victories, the Austrian manifestations, and the Bulgarian armistice greatly modified this situation. Was Germany ready not only to offer but to ask for peace? Those were the terms in which the question was to be asked. Listen to the reply.

This reply came from a quarter whence but yesterday it was least expected and in a form which increased its surprising character. It was the 1st of October, and the hour was 1 in the afternoon. Gen. Ludendorff called for the two liaison officers between the chancellery and main headquarters, Baron von Grunau and Baron von Lersener, and said to them:

"I beg of you to transmit an urgent request with a view to the immediate issuance of peace overtures. The troops still hold out to-day, but we can not foretell how it will be to-morrow."

Half an hour later, at 1.30 p. m., Marshal Hindenburg, in his turn, intervened, and bearing in mind that, according to announcement, a new chancellor was about to be appointed, either that evening or on the day following, he said:

"If the formation of the Government remained a matter of doubt and were not sure to be brought about this evening between 7 and 8 o'clock, I should consider it advisable, this very night, to issue the declaration to the foreign Governments."

At 2 o'clock in the afternoon the liaison officers confirmed the preceding statements. Baron von Grunau added:

"It seems to me that all sang-froid has been lost." He then called upon the Emperor, who believed, as he did, that peace overtures should await the formation of a new Government. But Gen. Ludendorff insisted:

"We are yet in an honorable position. Nevertheless, at any moment a break may come, and then our peace offer will arrive at the most unfavorable moment. I feel as if I were playing a game of chance. At any instant, and at no matter what point, a division may fail to do its duty."

At 9 o'clock in the evening, to the offer of peace he requested that in addition there be designated a spot where negotiations for armistice might be begun. He even took the pains to give the names of the persons who would compose the armistice commission, one being an Austrian and one a Turk. At midnight he continued, as follows:

"The offer of peace should be transmitted immediately from Bern to Washington. The army can not wait another 48 hours."

The distraction was complete. The facts go to prove this, since the army, which, according to the general, could not hold out 48 hours, actually went on fighting up until 11 November. This distraction is explained, apparently, by three circumstances. The first

is that the military situation, while not yet desperate, was bad. The second is that the commander in chief at main headquarters, so arrogant three months earlier, was now anxious to share his responsibilities with the civilian government. The third is that, in common with many Germans, he had entertained great illusions with regard to the terror inspired by Germany, the weakness of President Wilson, the possibility of a division among the Allies, and the nature of the conditions it would be possible to obtain. Prince Max of Baden, who had become that evening chancellor of the Empire and chief of the cabinet constituted in agreement with the Reichstag, received as a first move in the game this deluge of telegrams sent out in fright. He revolted and pretended before taking action to seek information. A representative of main headquarters, Maj. von dem Bussche, laid bare the situation on 2 October. He was less sanguine than his chief, but reticent, embarrassed, and on the whole not reassuring. He said among other things:

"The Entente, in attacking the entire front, obliged us to scatter our reserves. The divisions of the eastern front destined for the western front were seven in number, kept in their position because of the events in Bulgaria. The enemy placed in line many more tanks than were anticipated. The German troops fought well. But the battalions were composed of 540 men—and that in spite of the dissolution of 22 divisions—that is, 66 regiments. The reinforcements did not arrive. The Allies, on the contrary, were in a position to fill up their vacancies, thanks to the Americans. The German Army was still strong enough to hold back the enemy for two months, gain local successes, and force the Entente to new sacrifices. But the High Command was of the opinion that, so far as one man could judge, it would be impossible to force the enemy to make peace."

The chancellor desired that a respite of eight days be given him. The sole reply of Gen. Ludendorff was a demand, twice reiterated, for the text of the peace offer. The chancellor asked these questions: "For how long a period will the army be able to hold the front? Does the commander in chief anticipate the overthrow of the front, and if so, at what date? Does he bear in mind that if negotiations are begun under pressure of a critical military situation, this may lead to a loss of the colonies, of Alsace-Lorraine, and of the Polish Provinces?" To these questions there was but one reply, dated 3 October, under the signature of Marshal Hindenburg, who at Berlin on that day addressed the following letter to the chancellor:

"The supreme command of the army remains firm in his demand, formulated Sunday, 29 September, 1918, that an immediate offer of peace be made to our enemies.

"As a consequence of the breaking down of the Macedonian front and the resultant diminution of reserves for the western front, and also because of the impossibility we are experiencing covering the great losses which have been inflicted upon us in the engagements of the past few days, there remains no longer any hope—as far as one man can judge—of forcing the enemy to make peace.

"As far as the enemy is concerned, they are daily throwing into the struggle new reserves. Nevertheless, the Germany Army remains intact and victoriously repulses all attacks. But the situation becomes each day more critical and may force the High Command to decisions of weighty consequence.

"Under these conditions, it is better to forego the struggle in order to spare the German people and their allies useless losses.

"Each day lost costs us thousands of brave soldiers."

Under this pressure the chancellor yielded, and on 5 October he telegraphed, through the intermediary of the Swiss Government, to President Wilson, requesting him in the first place to convoke the belligerents for peace negotiations on the basis of the fourteen points, and then to arrest the flow of blood by the immediate conclusions of an armistice. Everyone, save Prince Max of Baden, Vice Chancellor von Payer, and Secretary of State Solf, seemed to believe that this cable of itself would settle the crisis; as a matter of fact Germany, in sending this message, placed herself in the hands of the Allies. The situation from this date until 11 November unfolds itself with implacable logic and with sovereign fatality.

The ministers grew nervous. They met together on 6 October. They wished to interview other generals besides Gen. Ludendorff. Herr von Payer said:

"This must be done. Ludendorff's nerves are no longer in steady condition."

It was decided to have recourse to the Emperor, because they feared the resignation of the commander in chief of the army if they endeavored to consult his subordinates. On 8 October, President Wilson replied to the German note of the 5th. This reply was brief, and plainly disconcerted the recipients. No parley possible, declared the President, either for peace or for an armistice, until preliminary guarantees are furnished, which are the acceptation pure and simple for the basis of peace as set forth on 8 January, 1918, and again there must be the certainty that the chancellor is not speaking merely in the name of the constituted authorities who have conducted the war up until the present time; and there must be an evacuation of all the invaded territories. The President refused to transmit anything, of whatever nature, to his associates before receiving complete satisfaction on these three points.

The German ministers held a council. There were successive conferences on the 9th, the 10th, the 11th, and the 12th. Gen. Ludendorff took part in the first one. The ministers made him feel that he was to bear the responsibility of the present situation, and, in consequence, that of the reply which was to be prepared. He spoke at length, with preterition and contradiction, beginning with an historical preamble which seemed destined to drown the issue. At times he was reassuring, and would say:

"I see no danger menacing the Lorraine front. The Rhine Province may be held for a long time. Once at the front the army will be able to repulse all enemy attacks."

He would then burst forth with alarming statements, such as:

"There is always the danger of the line being pierced. I do not fear it, but it is possible. Yesterday it came within a hair's breadth of this. The army needs rest."

As to a positive conclusion, there was none. He maintained that the offer of peace, and still further so, the armistice, were indispensable. But of the attitude to be assumed in facing the conditions as they were presented with regard to both propositions by the President of the United States, not one clear and decisive word was spoken:

"We can not hand over our German fortresses. The demand of the evacuation of Metz would be contrary to our honor. I fear no catastrophe. But my desire is to save the army in order that it may be used as a means of pressure during peace negotiations."

Here we have perhaps his underlying thought; negotiation with a view to changing, and, if need be, after changing to undo the whole matter. Really the German commander in chief at this time wanted not so much a definite peace as a suspension of hostilities. On the 9th he still believed it possible to obtain this. Hence these interventions, always crafty and scheming, in the preparation of the response. This response was sent out on the 12th in the name of Germany and of Austria-Hungary. Germany accepted the fourteen points and counted on the Allies accepting them also; the chancellor, in accord with the Reichstag, spoke in the name of the Government and of the German people. Germany was disposed to "accede to the evacuation propositions"—this was the sensitive point—but it is to be made the subject of preliminary negotiation and suggestion, and to this end there is to be the reunion of the mixed commission. If the Allies would but accede to this Germany would be temporarily saved. She could remove to the rear her matériel and regroup her units. Whilst the mixed commission was being brought together and evacuation discussed—a "methodical" evacuation Hindenburg had stated—she would have the time to make over her army. The ministers were united on these terms. Prudently they took the pre-

caution of insisting that Marshal Hindenburg and Gen. Ludendorff sign a written approbation covering them. The game, though clumsy, inspired all with hope.

Then came the thunderbolt. Into this trap so skillfully set the President refused to fall, and, turning the adversary's weapon, he gave a final answer in his note of 14 October. A mixed commission on evacuation? No. That, like the armistice itself, was a matter which "must be left to the judgment and the deliberation of military councils of the allied and associated Governments." Above all, no armistice would be possible unless "absolutely satisfactory guarantees were furnished, and the necessary surety of the maintenance of the present military superiority of the United States and her Allies." Neither would an armistice be granted "so long as the military forces of Germany continued to practice, on land and on sea, the illegal and inhuman methods which they persisted in making use of." Finally, there was to be no armistice so long as the German Nation rested in the hands of a military power which troubled the peace of the world. As for Austria-Hungary, Germany need not trouble herself in this regard, as the President would reply to her direct. The whole of the poor scaffolding set up by the German Chief Command was overthrown in one page. Armistice and peace were not to be the means employed to forestall a complete downfall and to prepare revenge. The answer must be yes or no to the above stipulations. If it is no, the war will continue, as it has continued for the past three months, with victory for the Allies. If it is yes, the military capitulation must be immediate and absolute by an acceptation pure and simple of conditions which the military councils of the Allies would alone fix.

This time the Germans understood. As it was stated some days later, on 17 October, by Col. Heye, of German headquarters, "it was perceived that it was a question of to be or not to be." And the military authorities withdrew, appalled, as they faced the results of their pressing demands of 1 October. As soon as the reply of President Wilson became known Gen. Ludendorff telegraphed urging the return of the troops from the Orient—the utility of which seemed uncertain on the 9th—and asking that an appeal be sent out to the German people—the efficacy of which proceeding he had spoken of, on that same day, in a derogatory manner. On the 17th he arrived in Berlin and appeared before the Government. The chancellor dryly reminded him that 15 days earlier he should have submitted this, and asks that he explain. Ludendorff replied in the following terms:

"I had already told the herr chancellor that I considered the piercing of our line as possible but not likely. If you question me, I can give you no other answer, according to my conscience. I do

not fear this. If reinforcements are sent me, I will face the future with entire confidence. If the army is able to hold out four weeks, and if winter sets in, then we may consider that we have escaped.

"The offensive force of the enemy has of late been very weak. If our battalions comprised their full effective the situation would be saved. Neither aviation nor the tanks can frighten me. If armistice negotiations were begun the mere evacuation of occupied territory would constitute a strong aggravation of the military situation. Already the mere discussion of it has brought about disagreeable consequences. Yesterday and the day before the enemy made but slight advance. We should say to our enemies before accepting conditions which are too hard: 'Obtain them, then, by force of arms.'"

So much brazen contradiction exasperated the ministers, principally Secretary of State Solf, who reminded Gen. Ludendorff of his appeals for help on 1 October. What was the answer?

"Why did you not give me the reinforcements of which you now speak?"

And Col. Heye adds:

"When the commander in chief decided upon an offer of peace he believed that an honorable peace might be concluded. But we should choose rather a fight to the finish if the conditions imposed upon us are dishonorable."

Herr Solf replied:

"If a refusal were to break off negotiations with Wilson, do you take upon yourself the responsibility?"

"Yes," replied the general.

They separated without coming to any decision, and on the 20th Ludendorff called upon Marshal Hindenburg for an expression of opinion, who wrote an embarrassed letter, of which the following is the purport:

"If we were to be beaten, our situation, which is bad, would not be appreciably worse than if we now accepted the conditions which they pretend to impose upon us. We can not, above all, abandon our submarine warfare without compensation. Better to fight to the last man that we may save our honor."

These were mere words and they carried no weight, because the High Command had lost prestige. Baron von Lersner, liaison officer at German headquarters, telephoned several days later:

"The commander in chief is furious. But in view of my long experience with him I can but place you on your guard, most emphatically, against placing any faith in his promises, and I recommend that you do not allow yourselves to be deterred from carrying out the peace policy in which we are engaged. The military situation to-day is just as desperate as it was three weeks ago. We have

no reason to hope for an improvement, and the invasion of our territory is but a matter of a few weeks, or, at the outside, a few months."

As a matter of fact, Lesner was right in his assertion about Ludendorff. After the 20th of September Marshal Foch, in control of the initiative from the 18th of July on, exploited his success. Three heavy, concentric, and uninterrupted attacks profoundly changed the strategic conditions. In the north, from 18 September to 18 October, the Germans were driven from the Belgian coast, from the region of Lille, and from the Lens Basin, and were obliged to take up a position behind the Terneuzen Canal, the Escaut, and the North Canal. At the center, from 17 September to 19 October, the Hindenburg line had been passed at every point and the Germans thrown back to the rear of the Sambre Canal, the Oise, and the Serre. In the Champagne and Argonne region, in an arduous and hard-fought battle, from 16 September to 12 October, brought the Allies to the Aisne and to the Aire. On 20 October the German Army, from the sea to the Meuse, was everywhere in retreat. They had engaged, during the course of four weeks, 139 out of 191 divisions. They had then but 7 fresh divisions in reserve, and 44 were completely exhausted. The companies had an average effective of 50 men, in spite of the fact that 40 per cent of these battalions were reduced from 4 companies to 3. Two-thirds of the divisions were almost constantly in line after 1 September. There was a falling off of 70,000 men per month in reinforcements, though the 1920 class was already in the depots. The material had not been renewed. There was a falling off, according to the June report, of 25 per cent in machine guns, 17 per cent in field guns, and 26 per cent in heavy guns. The lines that insured, at the front, a flank transportation from one point to another, so advantageously used by German headquarters during the entire period of the war, became unavailable. Four secondary lines and one main line were in whole or in part in the hands of the Allies. The remaining lines were blocked up with supplies and evacuation trains. And this to such an extent that during the first three weeks of October but three divisions could be transported on branch lines, as against 19 in May. Remember, too, that an enormous amount of material was dispersed over the entire front and in the rear. In order to save this, Germany lost her chance for a rapid retreat. This retreat, moreover, was a difficult one, for the troops were not in proximity to the German frontier, and it was not easy for the army groups en masse, of the Crown Prince and those of the Crown Prince of Bavaria, comprising 130 divisions, which for a proper retirement required a marching zone of 75 kilometers in width. To sum up, the morale had been weakened, seriously weakened; their hopes in July had been so high. The commander in chief said the fault lay with the Government, which was badly ad-

ministered from within. The Government was justified in its reply that they were the victims of events.

The generals requested an armistice, and the ministers took them at their word because they believed, in common with Baron von Lersner, that "the invasion of German territory was but a matter of weeks, or at the most months." Invasion! A word which for 100 years back Germany had been in the habit of applying only to her adversaries. Henceforth the Government became obsessed by it. Either there must be capitulation, under conditions fixed by the conquerors alone, as set forth by Mr. Wilson, or invasion, depending merely on the uprising of the masses, a particularly problematic liability in a country which had already given up 14,000,000 men. That was the alternative. The ministers made their choice—they would capitulate. After eight days of reflection, of hesitation, and of acrimonious debate with the commander in chief, upon whom it was endeavored to fasten the initial responsibility, they replied on 21 October to the American note of the 14th. And this time there was no further effort made to juggle with words or to talk of negotiation when it was merely a question of submission. Are the occupied territories to be evacuated? The proposition is "accepted." What of the armistice? Germany recognizes that the conditions thereof must be submitted to the judgment of competent military authorities. As to the illegal acts committed by the German forces, this was but necessary destruction involved in a retreat and sanctioned by the law of nations. Very rigid instructions, however, would be given that the rights of property should be respected. Torpedoings? These were not intentional. Nevertheless, an order had been issued to commanders of vessels to respect all passenger ships. As to the suppression of arbitrary power, that had already been accomplished and the cabinet had become parliamentary; the constitution was to be revised and the Government freed from all military and irresponsible influence.

This time, bound hand and foot, Germany was riveted to Wilsonian logic. Making no evasions, she yielded. The President took official cognizance thereof on 23 October by announcing that, furnished with all the pledges demanded in his preceding notes, he had apprised his associates. And once more, that there might be no doubt, he repeated the fundamental conditions which were not to be evaded by Germany:

1. An armistice will not be concluded unless the military counselors of the Allied and Associated Governments deem it possible from a military point of view.

2. The only armistice that will be proposed to the Associated Governments will be an armistice which will prevent (where are the German hopes of early October?) all renewal of hostilities by Germany.

3. The peoples of the world have no confidence whatever, and can have none, in the word of those who up to the present time have directed German public affairs. It will be of no avail to conceal these essential conditions.

Germany on 21 October had recognized her defeat. It remained with the Allied Governments to fix the terms of their victory and the basis of their security.

The Allies and the Armistice (23 October–11 November, 1918).

On the 23d of October President Wilson, who since the 5th had been daily in communication with the European Governments, and had published, day by day, his correspondence with Germany, communicated officially to his associates and laid before them two questions:

1. With regard to peace, and after the assurances furnished by the chancellor, are the Associated Governments disposed to conclude peace under the conditions and following the principles already known?

2. With regard to an armistice, and if the reply to the first question is affirmative, are the Associated Governments disposed to ask of their military counselors and of those of the United States that they submit to them "the necessary conditions to be fulfilled by the armistice of such a nature as to protect absolutely the interests of the peoples concerned and to assure to the Associated Governments the unlimited power to safeguard and to impose the details of peace to which the German Government has consented, *provided always that the military counselors deem such an armistice possible from a military point of view?*

It is my belief that never was any problem more clearly defined.

1. From the point of view of principle, do the leading generals consider, from a military point of view, that hostilities can be suspended or do they believe, on the contrary, that it is necessary to continue?

2. From the point of view of application, If the armistice is possible and desirable, what kind of conditions would prevent Germany from beginning the war anew and also make it possible for the Allies to impose the details of peace?

It was to the military authorities that Mr. Wilson asked that these two points be submitted. It was to them that he turned over, as it were, the sovereign rights of the Governments. Monsieur Clemenceau, in this respect, was in perfect accord with the President of the United States. To suspend hostilities otherwise than in accordance with the expressed views and in the manner decided upon by the

leaders who had charge of the military forces, would be contrary to all the principles from which his war policy had been inspired. In the name of the Supreme Council of the Allies, over which he presided, he therefore transmitted the papers to Marshal Foch, commander in chief, who, in the exercise of his rights and of his responsibility, was to reply to the two questions propounded.

Marshal Foch, on 25 October, conferred at Senlis with Gen. Pétain, Marshal Haig, Gen. Pershing, and Gen. Gillain, chief of the general staff of the Belgian Army. The latter, as he was delayed, took no part in the meeting. The commander in chief read to his assistants the papers in the case and asked their opinion. No one among them suggested a refusal of the armistice. Concerning the clauses different opinions were expressed. Marshal Haig was the first to speak: To his mind it was necessary to conclude the armistice, and to conclude it under moderate conditions. The victorious Allied armies were at the point of exhaustion. The units needed reconstruction.

Germany is not broken in a military sense. During the past few weeks her armies retired fighting very bravely and in the best order. If, therefore, it was really desired that an armistice be concluded—and it was desirable that it be concluded—it was necessary to propose to Germany terms that she might accept; that is to say, the evacuation of the invaded territories of France and of Belgium, as well as that of Alsace-Lorraine, and the restitution of the rolling stock taken, at the beginning of the war, from the French and from the Belgians. If more is asked, we risk in the first place a prolonging of the war, which has already cost us so dear; and further, there is danger of exasperating German national sentiment, and this for a doubtful result. Therefore the evacuation of all the invaded territories and of Alsace-Lorraine would seem sufficient to seal the victory.

Gen. Pershing stated that, as chief of the American Army in France, he desired to listen to the opinion of Gen. Pétain, and to speak only after him.

Gen. Pétain considered that if an armistice were concluded, it should be a complete armistice, which corresponded utterly and wholly to the definition which had been given it by President Wilson in his note of 23 October, an armistice which would prohibit the enemy from reopening the war and which would permit the Allies to impose the terms of peace. For that two conditions were necessary—the first, that the German Army should go back into Germany without a single gun, without a single tank, and with only their portable arms. In order to bring this about, he suggested a practical method, which was to make the period of delay in evacuation so short that it would be practically impossible for them to carry

away their matériel. The second condition would be to add to the evacuation of the invaded territories and of Alsace-Lorraine by the German armies the condition that the Allied armies occupy not only the left bank of the Rhine but also a zone of 50 kilometers upon the right bank: the delivery of 5,000 locomotives and 100,000 cars. Gen. Pétain added that although, in his opinion, these conditions were indispensable, it was not very probable that the Germans would consent to accept them.

Gen. Pershing, in a few words, declared himself to be in accord with Gen. Pétain. Marshal Foch thanked them for their communications, saying he would reflect upon them, and the conference came to an end. On the next day, 26 October, Marshal Foch conveyed by letter to M. Clemenceau his definite conclusions. Extracts from this letter have been published. It is well to give here the entire text in as far as the western front is concerned:

"After having consulted the commanders in chief of the American, British, and French armies,[1] I have the honor to acquaint you with the military conditions of agreement for an armistice which shall 'protect in an absolute manner the interests of the peoples interested and assure to the Associated Governments the power without limits to safeguard and impose the details of a peace to which the German Government has consented.'

"I. Immediate evacuation of the countries invaded contrary to law, namely, Belgium, France, Alsace-Lorraine, and Luxemburg.

"Immediate repatriation of their inhabitants.

"Abandonment of a part of the enemy matériel in the region evacuated.

"This evacuation in a manner so rapid as to preclude the enemy from carrying off a large part of the war matériel and supplies of every nature which are assembled at these points; that is to say, under the following terms of delay:

"At the end of 4 days the German troops shall have retired beyond limit 1 indicated in the attached map.

"At the end of 4 more days beyond the line of limit 2.

"At the end of 6 more days beyond the line of limit 3.

"Belgium, Luxemburg, and Alsace-Lorraine shall be liberated thus within a period of 14 days.

"Time will begin to count from the date of the armistice.

"The matériel abandoned by the enemy should amount in the aggregate to 5,000 guns,[2] (one-half heavy, one-half field), 30,000 machine guns,[3] 3,000 minenwerfer.

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[1] The chief of the general staff of the Belgian Army, summoned at the same time as the other commanders in chief, because of the distance was not able to reach my headquarters.

[2] That is to say, about one-third of the artillery matérial of the German Army.

[3] That is to say, about one-half of the machine guns of the German Army.

"These are to be given up on the spot, under conditions of detail which are yet to be fixed.

"The Allied troops will keep pace with the march of evacuation through these countries, which will be conducted in accordance with regulations of detail subsequently formulated.

"II. Evacuation of the countries on the left bank of the Rhine by the enemy army.

"The countries on the left bank of the Rhine shall be administered by the local authorities, under the control of the Allied troops of occupation.

"The Allied troops will assure the occupation of these countries by the means of garrisons, holding likewise the principal crossings on the Rhine (Mayence, Coblence, Cologne, Strassburg), with bridgeheads at these points, having a radius of 30 kilometers upon the right bank—similarly holding the strategic points of the region.

"A neutral zone will be set apart on the right bank of the Rhine, between the river and a line drawn parallel to the river and 40 kilometers toward the east, from the Swiss frontier to the Dutch frontier.

"Evacuation by the enemy of the Rhine districts shall be so ordered as to be completed within the following periods:

"Up to the Rhine, 8 days after the periods indicated above (being a total of 22 days from the date of signing of the armistice);

"Beyond the neutral zone, 3 additional days (a total of 25 days from the same date of signature).

"III. Throughout all the territory evacuated by the enemy there shall be no destruction of any sort, neither shall there be any damage or harm done to the persons or property of the inhabitants.

"IV. The enemy shall deliver, under conditions yet to be determined, 5,000 locomotives and 150,000 cars in good running condition.[4]

"V. The German command must reveal all mines or delay-action weapons laid within the territory evacuated and shall facilitate their discovery and destruction, under penalty of reprisal.

"VI. The execution of these conditions by the enemy shall be accomplished within a total period of 25 days. In order that their execution may be guaranteed, the blockade will be maintained integrally during the entire period of the evacuation. Only after this period has elapsed shall the provisioning of the enemy be authorized, in accordance with the special agreements regulating the matter.

"VII. The Allied prisoners will be returned at the earliest moment possible and under conditions of detail which shall be regulated subsequently."

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[4] Out of this number, 2,500 locomotives and 135,000 cars represented the matériel seized from Belgium and from France; the remainder was needed in the railway service on the left bank of the Rhine.

This letter needs no comment. Marshal Foch had listened and reflected. He had put to himself the question which he had formerly recommended to his pupils of the war academy. "What must we accomplish?" We must break the fighting force of Germany; oblige them to submit to the conditions of peace, no matter what they may be. To obtain this result, is it sufficient to do what Marshal Haig proposes? No; because the Germany Army, after the evacuation of the invaded territories, which territories she will quit with the honors of war, will remain intact upon their frontiers, and a menace to the Allies. Must we, in order to remove this danger, take from them all of their matériel? No; it will be sufficient to take enough to prevent her beginning again, holding, however, the bridgeheads of the principal Rhine crossings. In the absolute liberty of choice which has been solemnly assured him by the Governments, the commander in chief judges that this is the necessary and sufficient solution. The occasion will be given him later, moreover, in the days that are to follow, to develop his opinion and to furnish the motives thereof.

Between the 23d and the 26th of October the chiefs of the European Governments and their ministers of foreign affairs all arrived in Paris. On the 24th Mr. House joined them, six weeks ahead of President Wilson. The meetings began forthwith.

They did not at that time take upon themselves the official character which they assumed on the 31st, when the Supreme Council sat at Versailles. They met ordinarily in the morning at the residence of Mr. House, rue de l'Université; in the afternoon in the office of Monsieur Clemenceau, at the war ministry, or in that of Monsieur Pichon, at the ministry of foreign affairs. The situation at the various fronts was as follows: An expected armistice with Austria and the clauses of the German armistice were the subjects of conversation, Marshal Foch taking part on several occasions. These questions were examined and discussed. Certain members thought the conditions not sufficiently severe. Thus it was that Gen. Tasker H. Bliss, representing the United States in the council of military delegates, would have preferred both a shorter and a more rigorous text for certain articles. To his mind, two clauses were sufficient: total disarmament and complete demobilization. In that manner would it be made certain that Germany would be unable to fight any more. In that way she would be forced in advance to submit to all the terms of peace. Gen. Bliss, after a remarkable exposition of his theme, on 28 October, summed the matter up as follows, in a note delivered to one of the members of the council:[5]

[5] Apart from the interchange of views which took place among the military counselors, there was no discussion of the matter. It was not submitted to the chiefs of government.

"In view of the preceding considerations, I propose:

"First. That the associated powers demand the military disarmament and demobilization of the active land and sea forces of the enemy, leaving him only such interior defense as might be judged necessary for the preservation of order in the enemy territories. This implies the evacuation of all invaded territories, and their evacuation not by armed men, or those partially armed, but by disarmed men.

"The army, thus deprived of its weapons, can not fight, and, being demobilized, can not reassemble for the purposes of this war.

"Second. That the associated powers inform the enemy that there will be no weakening in their war aims, which will be submitted to a full and reasonable discussion among the nations who have been associated in the war, and though the enemy himself should be heard upon some of these matters, he must submit to what the associated powers finally decide as being such terms as shall assure both for the present and for the future the peace of the world."

On the other hand, from the naval point of view, the representatives of Great Britain thought that the delivering up of 150 submarines, as demanded by Marshal Foch, was not enough, and that almost the total number of battleships and cruisers should likewise be given up. It was under these conditions that, from the 27th to the 31st of October, the discussion began, the essential passages of which are here reproduced by me.

Faithful to the instructions he had received from President Wilson, Mr. House put to Marshal Foch this question of principle:

"Tell us, Marshal, simply from a military point of view, and every other consideration set aside, whether you would prefer that the Germans rejected or accepted the armistice, such as we have outlined it."

Marshal Foch replied:

"War is made simply for its results. If the Germans sign now an armistice the general conditions of which are such as we have just determined, *we shall have obtained these results.* The end having been attained, no person has the *right to cause one drop more of blood to be spilled.*"

In other terms, the commander in chief was of the opinion that if the Germans were to accept the conditions set forth in his letter of 26 October—and he was not so certain of this acceptation—we should, without hesitation, conclude and stop the war. The commander in chief went further, and to the suggestions of Gen. Bliss and of Mr. Lloyd-George, as well as to all others of the same nature, he placed in firm opposition the danger of additional requirements. He said:

"To propose, even to impose, upon paper! Nothing is easier. But we must face the realities. It is simple and logical to demand the

disarmament of the Germany Army in the field. But how would you bring this about? Would you march along ahead of them, occupying the points of passage? As to demobilization! Nothing would suit me better. But are you counting upon the occupation of all Germany? I ask this question; because if we do not occupy the German territory in its entirety we can never be sure that demobilization is effective. As for the German surface fleet, what do you fear from it? During the whole campaign scarcely one of its vessels ventured forth from port. The giving up of these vessels would be but a manifestation which would give pleasure to the public, nothing more. Why make the armistice heavier to bear, when its sole object, I repeat, is to place Germany out of the fight."

And Gen. Foch added:

"What would you do if the Germans, after having accepted the severe and adequate conditions that I propose, were to refuse to subscribe to the new humiliation that you suggest? Would you risk for that the renewal of hostilities and the useless sacrifice of many thousands of lives?"

The whode question, in fact, was this: Would the imposing of more severe terms prolong the war? For how many months? With what hazards? Messers. House and Lloyd-George, in conjunction with Monsieur Clemenceau, were disposed to demand the maximum, as soon as the military authorities should settle upon the necessary maximum, and on 29 October they begged the commander in chief to reply upon this point. He answered:

"I am not able and no one is able to furnish you with an exact prediction. It may last three months, may be four or five months. Who knows? However, if I am unable to fix a date, I am able, on the other hand, to answer as to the fundamental point involved. And upon that fundamental point I have this to say: *The conditions arrived at by your military counselors are the ones which we should and might be able to impose after the success of our next operations. If then the Germans accept them, it is useless to continue the struggle.*"

On the morning of 31 October the government chiefs, assisted by Marshal Foch, settled upon the definite text to be submitted to the Supreme Council of the Allies, a meeting of which was designated for the afternoon of the same day. This text adopted all the recommendations of the commander in chief, with a few additions and slight amendments, the principal ones being here given:

The delivery of 2,000 fighting and bombing planes, primarily all of the D–7's and all the night-bombing planes.

Throughout all the German territories evacuated by the enemy all military installations of whatever nature shall be delivered intact.

All manner of routes and means of communication, railroads, navigable waterways, roads, bridges, telegraphs, and telephones should be left absolutely unimpaired for use. All of the personnel, both civil and military, employed at present in connection therewith, shall be maintained, in their respective positions.

The right of requisition shall be exercised by the armies of the Allies and of the United States in all the territories occupied. The maintenance of the occupation troops in the Rhine districts (not including Alsace-Lorraine) will be at the charge of the German Government.

The enemy prisoners shall not be surrendered until after the signature of peace preliminaries.

There shall be delivered to the Allies 10,000 automobile trucks.

The railroads of Alsace-Lorraine shall be delivered, equipped with their full prewar personnel and matériel.

On the 31st of October, at 3 o'clock, the Supreme Council reassembled at Versailles. There were present: Messrs. Clemenceau, Pichon, Lloyd-George, Balfour, Orlando, Sonnino, House, Venizelos, Vesnitch, Marshal Foch, Admiral Wemyss, and Gens. Sir Henry Wilson, Bliss, and de Robilant. Monsieur Clemenceau requested Marshal Foch to address the meeting, and he gave a review of the military situation created by the victories of the past months. He characterized the situation of the German Army, after having given a numerical list of its losses, in the two following paragraphs:

"An army which for three months is forced to retreat, which suffers losses, and can no longer retrieve itself, is a beaten army. It continues desperately, however, in a methodical destruction, conducting warfare at all points."

"The military disorganization of the enemy is an established fact. But the struggle continues and is prolonged."

Leaving the Germans and turning to the Allies, Marshal Foch expressed himself in the following terms:

"On our side we are able, at the beginning of the winter, to continue the battle for 400 kilometers. The effectives of our armies will permit of this. The French and British Armies have, most certainly, been sorely tried, but they can go on. The American Army is still fresh and her reserves are arriving every day. The morale of the troops is excellent. This makes it possible for us to continue, if the enemy desires it, until there is complete defeat."

No one addressed the meeting with a view to a discussion of Marshal Foch's point of view, already known through the preparatory meetings, and the Austrian armistice was taken up, the examination of which subject occupied the entire session of 31 October. On 1 November there was another meeting followed by two others, on the 2d and 4th, the greater part of which were given over to the

German armistice. In the end, with the exception of certain augmentations, there was adopted purely and simply the project of the commander in chief, both for the western and for the eastern front.

With respect to the naval clauses, the debate was lengthy. In spite of the objections presented by Marshal Foch in the course of the preliminary meetings, the council of the admirals insisted that the major part of the German surface fleet should be delivered and interned. A curious detail was that Lloyd George, who had not questioned any of the land clauses, feared that the insistence of the naval experts might prolong the war. He asked that the decision be postponed, at least until it was known whether Austria would capitulate.

"We must ask ourselves if we wish to conclude peace immediately or if we wish to go on with the war for a year. It may be very tempting to take a certain number of boats. But that is not the root of the matter. At the present time each of our armies is losing weekly more soldiers than have been lost per week at no matter what period during the four first years of the war. We must not fail to consider that. If Austria falls we will know where we are. Monday we can be positive."

The debate was renewed, consequently, on the 4th of November and the following text adopted:

The German surface ships, which shall be designated by the Allies and the United States, shall be immediately disarmed and then interned in neutral ports, or in default of these, in Allied ports.

One grave question remained, and this was raised by the French delegation. It was that of reparation. At the meeting of 2 November Monsieur Clemenceau took up the discussion, stating:

"I would like now to raise the question of reparation and damages. It would not be understood with us in France, if we failed to inscribe in the armistice a clause to this effect. What I ask of you is the addition of three words, 'Reparation for damages,' without further comment.

The following conversation then took place:

Mr. Hymans. Would this be a condition of the armistice?

Mr. Sonnino. It is rather a peace condition.

Mr. Bonar Law. It is useless to insert in the armistice conditions a clause which could not be executed within a short period of time.

Mr. Clemenceau. I wish merely to mention it in principle. You must not forget that the French population is one of those that has suffered the most. It would not be understood by them if no allusion were made to this matter in the terms of the armistice.

Mr. Lloyd-George. If you take up the matter of reparations on land, mention must be made of reparations for sunken vessels.

Mr. Clemenceau. I include all that in my three words "Reparation for damages." I implore the council to enter into the spirit of the French population.

Mr. Vesnitch. And the Serbian.

Mr. Hymans. And the Belgian.

Mr. Sonnino. And the Italian also.

Mr. House. Since it is a question important to all, I propose that we accept the addition of Mr. Clemenceau.

Mr. Bonar Law. It has already been said in our letter to President Wilson, who will communicate it to Germany. It is useless to say it twice.

Mr. Orlando. I accept in principle, although it was not mentioned in the armistice conditions with Austria.

The addition "Reparation for damages" was then adopted. Mr. Klotz proposed putting at the head of this additional clause the words "With provision for all ulterior claims and demands on the part of the Allies and of the United States." This was forthwith decided upon. The Allied Governments being thereupon agreed upon what terms the armistice should contain, were ready to reply to the telegram of President Wilson of 23 October. They therefore charged Mr. House to communicate to the President the terms which had been arrived at, adding two reservations thereto. The communication was made in the following terms:

The Allied Governments have examined with care the correspondence exchanged between the President of the United States and the Government of Germany.

Under reservation of the observations which follow, they declare themselves ready to conclude peace with the German Government under the conditions laid down in the address of the President to Congress of 8 January, 1918, and in accordance with the principles set forth in his subsequent declarations. They would, however, remark that article 2, relative to what is commonly known as the freedom of the seas, lends itself to various interpretations certain of which are such as could not be accepted. They ought, consequently, to reserve to themselves an entire freedom of action upon this question when they take the matter up in the Peace Conference.

On the other hand, the President, while formulating the peace conditions in his address to Congress of 8 January, 1918, declared that the invaded territory should not only be evacuated and freed, but restored. The Allies think that no doubt should be allowed to exist regarding the significance of this condition. They understand thereby that Germany should make compensation for all the harm visited upon the civil populations of the allied nations, and upon

their property—in fact the aggressions of Germany upon the Allies, either by land or in consequence of air operations.

Mr. Wilson, at the same time, was begged to advise the German Government that they might send to Marshal Foch a duly authorized agent bearing a flag of truce, the former with the assistance of an English admiral, being authorized to act in the name of the Associated Governments.

What would be Germany's attitude with regard to this decision? I have shown that following her note of 21 October and the American reply of the 23d she was irretrievably bound to submit to the conditions of the Allies; the days which followed gave evidence to this. The German commander in chief was ever exasperated. Herr von Payer, who was with him on the 26th, declared that he heard constantly repeated: "We are not beaten. We ought not to capitulate." It is true that in response to his question: "What chance would we have, by continuing, to obtain better terms of peace?" no definite reply was given, except that, "Clemenceau was not in agreement with Foch upon the conditions, and that Foch in enunciating these moderate conditions gave evidence of the high opinion still held by him of the German force of resistance." The ministers questioned other generals, Callwitz and Mudra, who declared themselves confident, but who furnished no grounds for hope. Everything failed. On the 26th Ludendorff tendered his resignation, which was accepted. On the 27th the Emperor of Austria announced that he would make a separate peace. On the 30th he asked for an armistice, announcing, moreover, that if the conditions were too hard "he would put himself at the head of his Germans in Austria." After the 27th the German Government telegraphed to President Wilson that it awaited his proposals. On the 5th of November Gen. Gröner, successor to Ludendorff, realized that the military situation had become more acute. As a matter of fact, Marshal Foch continued his concentric advance, the armies of the north in the direction of Brussels, the English armies toward Ardennes, the French armies in the direction of Givet, and the Americans toward Méziéres and Sedan. The Germans from the 4th to the 9th of November lost the territory along the Escaut, abreast of Tournai, and were thrown back on the right bank of the Meuse. To finish them, the allied commander prepared in Lorraine an offensive, with Strassburg as a final objective. When on 6 November the American note of the 5th arrived, announcing that, under the conditions outlined, Gen. Foch was ready to receive the German plenipotentaries, they were designated on that very day and set out on the following day. The Emperor then abdicated.

The rest is known—the meeting of the two delegations at Rethondes, on the morning of the 8th, in the train of the commander

in chief, the effort of Erzberger to transform capitulation into negotiation.

"We have come to receive your propositions with a view to reaching a conclusion of an armistice."

Marshal Foch cut short the maneuver:

"I have no propositions to make. Do you request an armistice?"

"We request an armistice."

"Then the conditions arrived at by the Allied Governments will be read to you."

The 72 hours postponement passed quickly. On the 10th of November Secretary of State Solf announced by wireless that "the German Government accepted the conditions imposed." On the 11th, at 5 o'clock in the morning, the protocol was signed. The text was the same as had been adopted on the 4th of November by the Versailles Council. Marshal Foch made three concessions to Erzberger, for technical reasons—the delivery of 25,000 machine guns instead of 30,000; 1,700 airplanes instead of 2,000; 5,000 guns instead of 10,000, besides the promise of prompt revictualing measures. On the 11th, at 11 a. m., along the entire front, the armistice was in force. In the afternoon the French Parliament and the people of France acclaimed its signature.

Such, in its logical evolution, was the origin of the armistice of 11 November. Equivocation, born of ignorance, can not withstand the clarity of facts. Chained one to the other, these facts with their causes and consequences shed the light of their criticism upon the accumulation of legends and bring out the lines of reality. Leaving France for America on 17 October, 1918, and returning on 20 November, I consulted, in default of personal experience, every testimony, both written and oral. The German documents were borrowed from the official report published by the Government of the German Reich, none of the personalities therein being denied as to their authenticity. None of the text here produced can be contradicted. My account is exact and I believe it is complete.

What have we left here of this romance which has absorbed the attention of so many people, of the armistice whose conditions were determined upon secretly by an American dictator; endured by the Governments of Europe; imposed upon the victorious armies, in their weakness, in spite of the resistance of the generals? The armistice was openly discussed. President Wilson would not consent to transmit it to his associates except under the triple condition that its principle be approved by the military authorities and its clauses have their revision; that it be imposed upon the enemy and not discussed with them; and that it should prevent all renewal of hostilities and assure the submission of the vanquished to terms of peace.

It was thus that the debate with Berlin developed until 23 October; then with Paris from this date until 5 November. It was to the commander in chief that the decision was referred, both in point of view of principle and application. It was he who prepared the text of the terms, and it was those terms which were adopted. The rôle of the Governments was limited to their ratification and the inscription therein of augmentations in severity. That is the truth. We lose something in picturesqueness, but we gain in common sense.

Will it be stated, moreover, after what we have read of the German crisis of October, that Marshal Foch, by not pushing farther his demands, made a mistake, and that the people of Berlin, no matter what had been demanded, would have yielded to everything, as they did in the delivery of their naval fleet? This can always be contended. I will make reply, nevertheless, that when we stand in the future it is an easy matter to indulge in criticism of the past. In order to pass judgment upon the decisions made in October, 1918, by the chief of the armies of the Entente, and afterwards approved by the Governments, we must place ourselves again under the conditions of knowledge which were then his. The German official documents, which I have been able to make use of in the present study, were not published. The facts to which they relate were not at all known. Nothing was known of the unheard-of distraction which on 1 October had come upon imperial German headquarters; nor of its implacable consequences. Marshal Foch was sure of winning, and he said so. He added that the conditions fixed by him on the 26th of October were assuredly those which we should have been able to dictate after the subsequent successes of our operations. But having said this, he fulfilled his duty in refusing to give a definite term to German resistance, the vigor of which, in a critical position, was affirmed, contrary to the prevision of Ludendorff, lasting even to the date of the armistice. He likewise fulfilled his duty in refusing to juggle with the morale of the troops and of the country, and limiting himself to what he deemed to be both necessary and sufficient. It is easy, two years afterwards, to make the decision that if the war had been prolonged it would have lasted but eight days. Marshal Foch could not guarantee this. No one, even to-day, can guarantee it with certainty. A few days before the armistice one of our army commanders said to one of our political men:

"We are going to get ready to put in another winter."

The responsible chief did not desire "another winter" put in, as he did not consider this as indispensable to the achievement of victory. The Government, while determined to impose in full all that the commander should demand, did not feel that they had the right to go farther than he did. Moreover, the problem before them was to make matters so that Germany could not renew the war—

and she has not been able to renew the war; to force Germany to sign a peace treaty—and she has signed one. Events have, therefore, justified the course pursued by Marshal Foch. The armistice sealed the capitulation of the enemy, a capitulation from which there was no receding. As to the vehement attacks which accompanied the events of those great days and the following ones, no matter from what source they emanated, the fact can not be overcome that truth must prevail. It is along these paths that man slowly attains justice. My hope is that by this recital I have illuminated the way.—*André Tardieu.*

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America's World Policy and the Anti-Japanese Question.

It is generally known that the American standard of life is higher than that of the Europeans. The Americans are exceedingly reckless and their resisting power is very great. They abolished every system interfering with individualism in the earning of a livelihood and the resulting standards of life are revolutionary. We need make no special mention of the fact that the United States dominates both North and South America, since it proposes to dominate the world for the sake of improving its own means of livelihood. For this reason, too, America is practicing imperialism. In Columbia University Prof. Giddings lectures on democratic imperialism, and says that it is possible to have democratic imperialism (democracy and imperialism are incompatible with each other because democracy destroys imperialism and the tendency of imperialism is to undermine the rights of the people). In my opinion, it is a new idea to combine democracy with imperialism. There is a tendency in every country for the spirit of the laws and the social institutions to become more and more democratic; but, on the other hand, in new territories there is a tendency to establish a complex imperialistic government to increase the people's means of livelihood (the experimental stage of democratic imperialism has already passed and we see it in actual use). If one wishes to understand the principles of this democratic imperialism one should consult said Prof. Giddings, the foremost of American scholars.

When America became independent in 1776 she possessed only 13 States, with an area of only 356,000 square mines. The following

table will show that America now possesses more than 3,710,000 square miles.

	Square miles.
End of the Revolution	335, 446
1800	872, 135
1850	2, 997, 119
1900	3, 713, 132

Today it even has 500 square miles more than in 1900. Although the Americans constantly accuse the Japanese of aggressiveness, they themselves are the most prominent and most powerful aggressors.

America is so big a country her ambitions know no bounds. Although she is a strong supporter of the League of Nations, America did her best to secure recognition of her Monroe Doctrine by the other members. It is needless to say that the Monroe Doctrine is contrary to the idea of the League of Nations. Thus America uses the Monroe Doctrine for her own selfish ends. This proves that the ambitions of the United States in North and South America are apparent. It is generally thought that the Monroe Doctrine is a method of dominating a section of the human race, a sort of feudalism. Year before last Prof. Bingham, an American professor of Yale University, confessed that the Monroe Doctrine is an obstacle in the way of the world's progress. Of course, it can be argued that on account of social, commercial, and political conditions, South and North America are neighboring countries and should be united. But this argument does not represent the facts. Why? North and South America are really far apart. For instance, it is farther from Brazil, the largest country of South America, to New York and New England than to Spain and Portugal. It is a greater distance from the southern point of Florida to the northern point of the United States than to Gibraltar. And the distance between Valparaiso and San Francisco is greater than between Valparaiso and London. Consequently, the so-called community of interests is absolutely baseless. South Americans view the Monroe Doctrine as a sort of burden. It is detrimental to South Americans that they must look upon America as their overseer. Mr. Huerta, the former President of Mexico, whose indignation was aroused by the Monroe Doctrine in domination of South and North America, often told the editor of the Daily Telegraph that the Monroe Doctrine purported to assist the Latin Republics in their infancy, the Monroe Doctrine protected their independence and helped them grow strong, but that the flourishing Latin Republics no longer needed instruction and oversight as in former days. Moreover, great harm was being done by America's violent and influential interference under the guise of the Monroe Doctrine.

But Americans often declare that Latin America should be under their protection to insure development. This declaration is of the

same nature as that made by the British that Great Britain's powerful navy would be used to maintain the peace of the world—these are all arguments of the same hue. America's southern boundary does not only include Mexico but extends to the Panama Canal. Americans despise the people of Mexico and Central America, but they are also reaching out their hands to the whole of South America. South Americans have in recent years organized a triple alliance under the name of the A. B. C. Alliance (Argentina, Brazil, and Chile) for the purpose of preventing the extension of America's influence in their respective States, but it still remains to be seen whether or not they will be successful.

Attention is called to the fact that America not only encroaches upon the countries in the south but also intends to seize those in the north. Several years ago during the Presidential election, Mr. Taft, after the conclusion of a reciprocity treaty, wrote a secret letter to Roosevelt embodying the Government's attitude toward Canada. Before this a suggestion had already been made in Congress to the effect that Canada should be annexed. The above facts clearly revealed to the world America's ambitions toward Canada. In the said letter Taft suggested that after the conclusion of the treaty of reciprocity Canada would be treated as a colony of America. In his reply Roosevelt indorsed the reciprocity treaty on economic and political grounds. When the correspondence was published Great Britain and Canada arose in indignation. The endorsement of Roosevelt caused bad feeling in Great Britain. In spite of the above facts, America still adheres to the Monroe Doctrine and under its cover seizes territory both north and south. It might be pardonable if America refrained from interfering with the affairs of other continents, but when America was seeking the recognition by the Allies of the Monroe Doctrine she did not cease to interest herself in the affairs of various other countries.

Thus, America's attitude is simply imperialistic.

At the Peace Conference in Paris it was the idea of America that the League of Nations should dispose of the German colonies. America was not willing to permit Japan, Great Britain, and France to dispose of the German colonies in Africa and in the Pacific, an area of about 1,000,000 square miles. One of the Marianne Islands, in the Pacific, is Guam, taken by America from Spain. She also took Porto Rico and the Philippines. All these islands are important to America as points of support in her line of communications. Guam, a naturally good harbor, is situated in the center of the Pacific and is used as a naval base by America. But surrounding Guam are the Marianne Islands and the Carolines, which are under the control of Japan. In case of war, Guam would lose its value as a naval base; with the Marianne Islands only 121 sea

miles from Guam and the Carolines only 458 sea miles. Guam would be considered as lost to Japan. Moreover, if the German colonies were divided as spoils among the Allies, excluding America, she would not be free to invest capital to secure markets. Therefore, America planned to transfer the authority of disposing of the German colonies to the League of Nations, so that she could keep Japan from using these islands to increase her naval power in the Pacific, on the one hand, and on the other, keep Britain and France from seizing the German colonies for their own markets. For these reasons, at the Peace Conference, America first refused to share the German territory with other Allies and also suggested that the conditions of the treaty with Germany should be brought to the League of Nations for consideration. Under such conditions the safety of Guam could be insured. In order to secure control of the marine cables, America is trying to take from Japan the administrative control of the Island of Yap. America's reason for paying so much attention to so small an island in the Pacific is her desire to use the small island for carrying out her scheme for the control of the continent of Asia. The good work of Perry, an American, in opening Japan is still praised in Japan. He came to Japan with the intention of seizing the Pescadores, or some other harbor of Japan, as an American naval base in the Pacific. In a letter addressed to the American Government by Perry on 14 December, 1850, the above fact was plainly stated. In reply the American Secretary of State (Clayton), while supporting the suggestion of Perry, emphasized that it was advisable to secure the Pescadores without resorting to war against Japan. It can be seen from the foregoing, which happened within our memory, that America is the real world aggressor to-day. America's ambitions extend to Asia, our native land, while Germany wished to impose her imperialistic ideals on the world by means of force of her influence—but the motive is still imperialistic.

These Aryans, ambitious, resolute, and obstinate, hoping to extend their interests from the Atlantic to the Pacific in this manner, make it inevitable that in Asia the Americans should clash with the Japanese, who are more ambitious and more resolute than the other peoples of Asia. Furthermore, the Americans and the Japanese, unfortunately, are not of the same race and their standards of living and ideals of life are also dissimilar, so that they must, sooner or later, clash.

Amongst the Aryans, the British and the Americans developed first and farthest, and so they often clash more violently with alien race than do the people of other countries of Europe. As a comment on the race question, the poet (?), Chapline, said that "other

races are inferior to the white race." It is a matter of fact that the white race hates the others. On 21 March, 1904, Balfour, a virtuous politician of Great Britain, brought a question to the lower House for discussion to the effect that "action should be taken for the development of Africa because the birth rate of the negroes was higher than that of the white race and this was the cause of the complicated situation on that continent." This clearly proves that the white race is worrying about the increase of other races.

On 12 April, 1914, Kelvin (?), in a speech before the Association of Fine Arts—a British politician had previously said "Do not forget the black peril"—said that "although the black slaves were released in Lincoln's time, the Americans intended to exterminate the negro race." When the writer was in America he also heard the same story. Now there are about 90,000,000 (?) negroes in America. Ostensibly these negroes are protected and supervised in America, but they are actually maltreated. According to the census of 1909, four-tenths of America's population were negroes who lived in the 12 Southern States. In these 12 States $32,000,000 gold is spent annually for elementary education, and of this sum only $400,000 is used for the negroes, who thus secure 1½ per cent of the total.

Americans really do not give the negroes a good education. Moreover, they lynch them when they do anything displeasing to the Americans. In a country said to be law respecting, lynching is resorted to—a punishment more barbarous than any civilized country ever used. Still America commits such barbarities. During the period from 1855 to 1915 about 3,583 cases of lynching were reported to the Government. From January to November, 1915, 78 persons were lynched, and of these all but 21 were negroes and Mexicans. In argument the Americans say that lynching is only used for the protection of white women. But this is not true, as, according to the Government investigation in regard to the lynchings of 1915, only 10 were guilty of rape, 2 of attempted rape, and 2 of assault on white women. In all the other cases white women were not concerned at all. It can be seen from the above that Americans violently hate alien races. The Americans boycott the Japanese because Japan has been ranked as a first-class power in consequence of three wars—against China, Russia, and Germany.

There are numerous reasons for the anti-Japanese activities in the various countries along the Pacific. The general causes are (1) social, (2) economic, and (3) political. The social cause is the fact that the Japanese and American standards of living and ideals of life are not the same. The Aryans were nomads, living on their flocks and herds, and moving from place to place. This caused the idea of democracy to develop among them. They were especially in-

fluenced by Christianity, which led them to establish new and free social institutions. The Japanese originally depended on agriculture for their means of living. They had homes on their lands and they were filial to their parents and loyal to their country. Therefore, it is difficult for Americans and Japanese to live together.

The economic cause is the labor question. It is an indisputable fact that Japanese laborers are more diligent and obedient than American laborers. The former also are satisfied with small wages, while the latter are not. Americans know that they can not compete with the Japanese, and therefore they boycott them. If Japanese laborers would insist upon equal treatment with the Americans it would not be necessary for the latter to boycott the former.

American labor fears that it can not maintain high wages if the Japanese are once allowed to enter the American labor market. Americans will not boycott Japanese if on the one hand Japanese labor entering the country can be limited, and, on the other, if Japanese labor will accept the conditions insisted upon by American labor. The boycott against the Japanese grows out of racial differences. The writer asked the chairman of a labor union in San Francisco year before last why Japanese laborers were not permitted to enter the union. The chairman could only give racial reasons.

For the above two reasons the anti-Japanese activities in districts along the Pacific coast are violent. But there is also a political reason. Politicians who desire to secure the labor vote in order to get into the House or the Senate lose no chance to court favor with the laborers by stirring up anti-Japanese feeling. Shippers and business men also urge the public to boycott the Japanese. Newspaper men urge the adoption of anti-Japanese measures for the purpose of securing bribes or of earning the Government's favor. Anti-Japanese agitators in California are such Senators as Phelan, Johnson, and Borah, who abused Japan on the Shantung question some days ago and who have been elected in California and other Pacific coast districts. Johnson is the most noted one. Borah is from Idaho, and Poindexter from Washington. There is no doubt that the anti-Japanese feeling has also a political basis. This sort of politician stirring up anti-Japanese feeling will some day cause a very complicated situation.

The anti-Japanese agitation in California aims to do three things:

1. To prohibit the Japanese having any shares in any agricultural organization or company in California.

2. To cause all Japanese to forfeit the right of holding land as minors when their parents are Japanese.

3. To refuse to recognize Japanese children born in America as Americans if their parents were not American citizens.

It is proposed to amend section 1 of article 14 of the American Constitution so that the Japanese shall forfeit their right to rent land. This is more serious than any previous anti-Japanese movement. If said amendment can be passed the right of the Japanese to hold or lease land in California will be forfeited, and it will be impossible for the Japanese to develop any more land in California. However, it is a difficult matter to amend section 1, article 14, of the American Constitution, which authorizes Japanese born in America or naturalized according to American law to become American citizens. As long as this provision remains in force it is illegal and most unreasonable for Americans to refuse to Japanese children the right of citizenship and the right to hold land. There are urgent reasons for the Japanese Government to lodge strong protests with the American Government with reference to this question of leasing land. When in Washington the year before last the writer met Mr. Gompers, the head of the American Federation of Labor, who said it would endanger American labor to permit the Japanese, whose standard of living was low, to emigrate to America. The writer argued back that the Japanese standard of living was low because the Japanese were forced to save money in preparation for return to their homes, since they were refused naturalization and the right for owning land, and of leasing on long terms, along the Pacific coast. The Japanese laborers in America, therefore, are always economical in matters of dress and food. But the cost of living of those Japanese who were allowed to possess land or to lease it on long terms was as high as that of the Americans. Japanese contribute as much as the whites to the educational and military expenses. When the writer made the above facts known in some places in America, Gompers confessed that American investigations on this matter were not complete. In case the Japanese communicates with the American Federation of Labor or sends a mission with reference to the matter, it should protest against the anti-Japanese emigration. It also affords an opportunity to point out the improper treatment Japanese immigrants receive. But it is a question whether the Japanese Government and diplomats are wise and energetic enough to handle this problem, to seize every opportunity, and use every organ for dealing the deathblow to racial prejudice.

The various Japanese organizations should lose no time in securing equality of rights as to citizenship. Japan should also decide on a proper policy of emigration in the right way. Although the anti-Japanese feeling in America to-day is very active, there are some Americans who regard this treatment of other races as a matter of prejudice. Furthermore, the noted president of Leland Stanford University (Dr. Jordan) and the high-minded men in California are zealously opposing this rabid anti-Japanese agitation.

The judges, the editors, and the prominent politicians in California give no support to the spread of this anti-Japanese movement and hope that the treatment of the Japanese will not become worse. Christian associations in San Francisco have since last spring worked together for the suppression of this anti-Japanese agitation and have never ceased to send out lecturers to allay the feeling. Now it is important that the representatives of the Japanese Government and nation should join these people in exterminating this anti-Japanese agitation. The Japanese Government has not yet utilized the American press to explain America's misconceptions about the Japanese. With a few exceptions the Japanese diplomats are ignorant of the activities of the civilized world as well as the labor world. The diplomats have failed to make the anti-Japanese leaders and politicians understand the Japanese viewpoint. If the Japanese Government were to send a competent official as a representative to approach America and exchange views, the anti-Japanese question might perhaps be easily settled. Liumuwenchih (a Japanese) has recently conferred two or three times with American labor in order to reach an understanding. Thus his work is superior to that of the Japanese diplomats. The anti-Japanese question is not a universal diplomatic problem which can be decided upon the basis of objective force or a subjective conception. The important thing is to remove the misunderstanding which exists between Americans and Japanese. This question can not be settled by legal or military methods, but only by philosophical and educational methods. There is no fear that the Japanese in California and the Americans will clash, but there is really strong ground for fearing that the Japanese and Americans will collide in Asia.

Neither Japan nor America will resort to war on account of the California question. Although the California question is an important one to Japan, she will not sever her relations with America on that account. The Asiatic question is more serious. In case of any clash between the two countries in Asia, Japan will be in the same position in Asia as in California. Thus the Japanese drive their own country to extinction. This time the Americans may drive the Japanese from the various districts along the Pacific. In a statement of America's foreign policy an American minister to a certain country whose name is unknown declares that America is so rich and strong that she can supply the financial needs of the world. One is surprised at such a declaration. It is true that Asia is a place wherein America should develop her economic power; that is the reason why America shakes hands with China, seizing the opportunity, when China and Japan are not on good terms, to drive out Japanese influence, and to reserve the room for American markets. America's anti-Japanese diplomacy has succeeded to a certain point.

She also takes advantage of the weak points of Japan's diplomatic and colonial policies in order to induce Korea to agitate for independence and to sweep Japanese interests from Siberia. Japan stands isolated. In case of a breach between the two countries it is doubtful whether the British colonies, such as Canada and Australia, which always take the same attitude toward Japan as America, will remain neutral in spite of the Anglo-Japanese Alliance. Chinese who sympathize with America must hope for an American victory and may be ready to help her. The Bolshevists who have so far been kept under control by the Japanese military forces will lose no chance of rising up again against Japan. Revolutionists in Korea and Formosa will no doubt set up their flags under these circumstances. Japan has too many enemies to cope with. Japan will find her position more difficult than Germany's. It is feared that Japan's army of 25 divisions and her navy of 1,000,000 men will be useless. America's far eastern policy is to put Japan in a difficult position and she has partially succeeded. But the Japanese Government, in its ignorance, has always, step by step, gone into dangerous positions. In "Asia" of September, 1918, a famous American scholar on the Far East named Abbott attacked Japan's foreign policy in emphasizing militarism rather than civilization. This means that Japan follows the example of Germany. If Japan desires to save herself from isolation and wishes to oppose America's ambition of dominating the world, the only thing for Japan to do is to win the sympathy of the Asiatic peoples. As soon as Japan changes her attitude and can depend on the Asiatic people for help she will be out of danger of being isolated.

Japan should adjust herself accordingly without delay. As a clash between Japan and America is inevitable in Asia, Japan should maintain her relationship with China, which is the largest country of Asia. If help can be obtained from China victory will be insured. If China is an enemy we will meet defeat as far as soldiers, war materials, and military bases are concerned. If China unites with Japan the latter will not fear America's violent attacks. In the event of China's joining with America Japan will face a situation more serious than did Germany when attacked by France and Russia. However, if Japan meets disaster, China will be unable to escape the influence of the white race. After the downfall of China and Japan the other races will never throw off the yoke of the white race. Japan will sacrifice everything to keep the white race from dominating the world. China and Japan should cooperate to resist America's policy of world domination. As a means of promoting the world's civilization it is necessary that not only should China unite with Japan, but also Russia, Korea, and Formosa. To protect the world's civilization is a heavenly appointed duty, but in

doing so Japan has become the enemy of the present civilization. The cause of this is Japan's militaristic diplomacy, which does the country no good. To-day the majority of the Japanese admit the defects of such militaristic diplomacy, but as yet nothing has been done to change it. The writer respects the military men, but he believes that by interfering with domestic and foreign affairs the military leaders only disqualify themselves.

NAVIES OF THE WORLD POWERS.

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TABLE I.—*Characteristics.*

Battleships, first line: All-big-gun battleships carrying a broadside of at least 10 guns of 12-inch or larger, and displacing at least 20,000 tons.

Battleships, second line: Those all-big-gun battleships not equal to the qualifications of battleships, first line, and also mixed caliber battleships launched after 1 January, 1901.

Battle cruisers, first line: Those battle cruisers carrying 13.5-inch guns or larger, and capable of making a speed of at least 27 knots.

Battle cruisers, second line: Those battle cruisers carrying 12-inch guns and not capable of making 27 knots' speed.

Cruisers, first line: Those large, fast cruisers capable of keeping station in the battle fleet, and launched after 1 January, 1901.

Cruisers, second line: Those cruisers launched after 1 January, 1901, but not equal to the standards of cruisers, first line.

Light cruisers, first line: Those light cruisers having a speed of 27 knots or more, and launched after 1 January, 1901. They are capable of keeping the sea with the fleet.

Light cruisers, second line: Those light cruisers launched after 1 January, 1901, having a displacement of 3,500 tons or over, which are not equal to the duties of light cruisers, first line.

Destroyer leaders: Must have a speed of at least 30 knots and displace at least 1,500 tons.

Destroyers, first line: Those destroyers launched after 1 January, 1906, displacing 800 tons or more, and capable of a speed of 27 knots.

Destroyers, second line: Those destroyers launched after 1 January, 1906, displacing 500 to 800 tons and capable of a speed of 25 knots.

Submarines, first line: Submarines launched after 1 January, 1906, displacing 500 to 1,000 tons.

Submarines, second line: Submarines launched after 1 January, 1906, displacing 300 to 500 tons.

Fleet submarines, first line: Fast submarines launched after 1 January, 1906, displacing at least 1,000 tons.

Fleet submarines, second line: Submarines launched after 1 January, 1906, displacing 1,000 tons or more, but not equal in speed to fleet submarines, first line.

Cruiser submarines: Long-range submarines launched after 1 January, 1906, displacing at least 2,000 tons.

Monitor type submarines: A special type carrying a 12-inch gun.

Aircraft carriers: Ships with a speed of at least 20 knots fitted with a deck from which planes can take off and on which planes can land.

TABE II.—*British Navy, 1 January, 1921.*

Class.	Built.		Building.	
	No.	Tons.	No.	Tons.
Battleships:				
First line	26	635,650	.....	.....
Second line	20	327,100	.....	.....
Battle cruisers:				
First line	6	175,400	.....	.....
Second line	4	72,100	.....	.....
Cruisers:				
First line	2	37,200	.....	.....
Second line	20	230,300	.....	.....
Light cruisers:				
First line	44	189,295	5	38,780
Second line	24	113,895	.....	.....
Destroyer leaders	24	41,774	1	1,750
Destroyers:				
First line	334	356,418	11	14,390
Second line	42	31,271	.....	.....
Submarines:				
First line	71	48,431	.....	.....
Second line	66	23,188	.....	.....
Fleet submarines:				
First line	18	29,220	18	20,040
Second line	7	8,800	.....	.....
Cruiser submarines	1	2,014	.....	.....
Monitor type submarines	2	3,840	1	1,930
Aircraft carriers	6	86,250	.....	.....
Total	717	2,412,146	36	76,890

TABLE III.—*Japanese Navy, 1 January, 1921.*

Class.	Built.		Building and projected.		
	Number.	Tons.	Number.	Tons.	Remarks.
Battleships:					
First line	6	178,320	7	261,400	3 building; others authorized or projected.
Second line	4	71,500	.....	.....	
Battle cruisers:					
First line	4	110,000	8	320,000	Not yet laid down.
Second line	.....	.....	.....	.....	
Cruisers:					
First line	.....	.....	.....	.....	
Second line	5	58,206	.....	.....	
Light cruisers:					
First line	6	25,350	9	51,800	Probably all building.
Second line	1	4,100	.....	.....	
Destroyer leaders	.....	.....	.....	.....	
Destroyers:					
First line	27	26,926	15 30	16,710 (?)	Building. Projected.
Second line	12	7,850	.....	.....	
Submarines:					
First line	.....	.....	10	(?)	
Second line	10	4,000	9	(?)	
Fleet submarines:					
First line	.....	.....	.....	.....	Probably 30 other submarines projected; types not known.
Second line	.....	.....	.....	.....	
Cruiser submarines	.....	.....	.....	.....	
Monitor-type submarines	.....	.....	.....	.....	
Aircraft carriers	.....	.....	.....	.....	
Total	75	486,252	39 79	649,910 (?)	

TABLE IV.—*French Navy, 1 January, 1921.*

Class.	Built.		Building and projected.		
	Number.	Tons.	Number.	Tons.	Remarks.
Battleships:					
First line	7	161, 911	4	116, 000	
Second line	10	166, 039	.....	.....	
Battle cruisers:					
First line	.....	.....	.....	.....	
Second line	.....	.....	.....	.....	
Cruisers:					
First line	.....	.....	.....	.....	
Second line	8	99, 705	.....	.....	
Light cruisers:					
First line	[1] 4	17, 802	6	31, 200	Projected; probably not laid down.
Second line	[2] 1	3, 444	.....	.....	
Destroyer leaders	.....	.....	12	21, 600	Do.
Destroyers:					
irst line	[3] 10	9, 468	1	890	
Second line	36	25, 357	.....	.....	
Submarines:					
First line	17	12, 603	.....	.....	
Second line	46	18, 255	.....	.....	
Fleet submarines:					
First line	.....	.....	.....	.....	
Second line	.....	.....	.....	.....	
Cruiser submarines	.....	.....	.....	.....	
Monitor-type submarines	.....	.....	.....	.....	
Aircraft carriers	.....	.....	1	(?)	Former battleship Bearn may be converted to an aircraft carrier.
Total	139	514, 584	24	169, 690	

[1] All are ex-German.
[2] Ex-Austrian.
[3] One ex-German destroyer of 1,400 tons displacement is included.

TABLE V.—*Italian Navy, 1 January, 1921.*

Class.	Built.		Building and projected.		
	No.	Tons.	No.	Tons.	Remarks.
Battleships:					
First line	4	89,170	4	123,600	Construction reported stopped.
Second line	5	68,890	.....	.....	
Battle cruisers:					
First line	.....	.....	.....	.....	
Second line	.....	.....	.....	.....	
Cruisers:					
First line	.....	.....	.....	.....	
Second line	3	31,228	.....	.....	
Light cruisers:					
First line	[1] 5	20,678	.....	.....	
Second line	[2] 3	10,108	.....	.....	
Destroyer leaders	.....	.....	5	9,925	
Destroyers:					
First line	10	13,141	9	8,660	
Second line	29	22,029	2	1,540	
Submarines:					
First line	9	6,256	.....	.....	
Second line	13	3,992	4	2,166	4 other small submarines are building, but are even below this classification.
Fleet submarines:					
First line	.....	.....	.....	.....	
Second line	.....	.....	.....	.....	
Cruiser submarines	.....	.....	.....	.....	
Monitor-type submarines	.....	.....	.....	.....	
Aircraft carriers	.....	.....	.....	.....	
Total	81	265,492	24	145,891	

[1] Includes 3 ex-German.
[2] Includes 2 ex-Austrian.

TABLE VI.—*United States Navy, 1 January, 1921.*

Class.	Built.		Building and projected.		
	No.	Tons.	No.	Tons.	Remarks.
Battleships:					
First line	16	435,750	11	421,900	
Second line	16	240,242	.....	.....	
Battle cruisers:					
First line	.....	.....	6	261,000	
Second line	.....	.....	.....	.....	
Cruisers:					
First line	.....	.....	.....	.....	
Second line	10	131,300	.....	.....	
Light cruiser:					
First line	.....	.....	10	75,000	
Second line	3	11,250	.....	.....	
Destroyer loaders	.....	.....	.....	.....	
Destroyers:					
First line	260	308,062	38	46,109	12 others are authorized but held in abeyance.
Second line	21	15,580	.....	.....	
Submarines:					
First line	43	22,961	.....	.....	1 more authorized but not under contract.
	9	.....	42	.....	
Second line	44	16,739	.....	.....	
Fleet submarines:					
First line	2	.....	4	.....	6 more authorized, but not under contract.
Second line	.....	.....	.....	.....	
Cruiser submarine	.....	.....	.....	.....	
Monitor-type submarines	.....	.....	.....	.....	
Aircraft carriers	.....	.....	.....	.....	1 collier being converted to an experimental aircraft carrier, can not be included as a modern ship.
Total	413 11	1,181,884	65 46	804,009	

TABLE VII.—*British, Japanese, and United States first-line capital ships, 1 January, 1921.*

	Great Britain.		Japan.		United States.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.
Battleships, first line	26	635,650	6	178,320	16	435,750
Battle cruisers, first line	6	175,400	4	110,000	.....	.....
Total	32	811,050	10	288,320	16	435,750

TABLE VIII.—*British, Japanese, and United States first-line capital ships carrying 13.5-inch guns or larger, 1 January, 1921.*

	Great Britain.		Japan.		United States.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.
Battleships, first line	22	548, 250	5	157, 520	10	300, 100
Battle cruisers, first line	6	175, 400	4	110, 000	.....	.....
Total	28	723, 650	9	267, 520	10	300, 100

TABLE IX.—*British, Japanese, and United States capital ships of the first line, carrying 13.5-inch guns or larger, at end of 1923.*

[Provided present programs are complied with.]

	Great Britain.		Japan.		United States.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.
Battleships, first line	22	548, 250	8	258, 920	21	722, 000
Battle cruisers, first line	6	175, 400	8	270, 000	6	261, 000
Total	28	723, 650	16	528, 920	27	983, 000

TABLE X.—*British, Japanese, and United States capital ships of the first line, carrying 13.5-inch guns or larger, at end of 1927.*

[Provided present programs are complied with.]

	Great Britain.		Japan.		United States.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.
Battleships, first line	22	548, 250	12	[1] 418, 920	21	722, 000
Battle cruisers, first line	6	175, 400	12	[1] 430, 000	6	261, 000
Total	28	723, 650	24	[1] 848, 920	27	983, 000

[1] Approximate tonnage.

TABLE XI.—*Navies of the world powers in vessels of the first line, 1 January, 1921.*

Ships.	Great Britain.		Japan.		France.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.
Battleships	26	635,650	6	178,320	7	161,911
Battle cruisers	6	175,400	4	110,000	.....	.....
Cruisers	2	37,200	.....	.....	.....	.....
Light cruisers	44	189,295	6	25,350	4	17,802
Destroyer leaders	24	41,774	.....	.....	.....	.....
Destroyers	334	356,418	27	26,926	10	9,468
Submarines	71	48,431	.....	.....	17	12,603
Fleet submarines	18	29,220	.....	.....	.....	.....
Cruiser submarines	1	2,014	.....	.....	.....	.....
Aircraft carriers	6	86,250	.....	.....	.....	.....
Total	532	1,601,652	43	340,596	38	201,784

Ships.	Italy.		United States.	
	Number.	Tons.	Number.	Tons.
Battleships	4	89,170	16	435,750
Battle cruisers	.....	.....	.....	.....
Cruisers	.....	.....	.....	.....
Light cruisers	5	20,678	.....	.....
Destroyer leaders	.....	.....	.....	.....
Destroyers	10	13,141	260	308,062
Submarines	9	6,256	43 9	22,961 (?)
Fleet submarines	.....	.....	2	(?)
Cruiser submarines	.....	.....	.....	.....
Aircraft carriers	.....	.....	.....	.....
Total	28	129,245	319 11	766,773 (?)

TABLE XII.—*Guns on broadsides of capital ships of first line, 1 January, 1921.*

[Ships of Table VII.]

Gun.	Great Britain.	Japan.	United States.
12-inch	44	8	64
13.5-inch	144	.....	.....
14-inch	.....	80	112
15-inch	100	.....	.....
16-inch	.....	8	.....
	288	96	176

TABLE XIII.—*Ships not equal to the standards set for vessels as in table, but launched within the dates of Table I.*

Ships.	Great Britain.		Japan.		France.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.
Cruisers	.....	.....	.....	.....	1	7,547
Light cruisers	13	26,850	2	6,840	.....	.....
Destroyers	.....	.....	19	7,163	26	9,871
Submarines	.....	.....	13	2,362	1	300
Aircraft carriers	1	7,450	.....	.....	.....	.....
Total	14	34,300	34	16,365	28	17,718

Ships.	Italy.		United States.	
	Number.	Tons.	Number.	Tons.
Cruisers	1	7,234	.....	.....
Light cruisers	.....	.....	.....	.....
Destroyers	9	3,942	.....	.....
Submarines	53	11,203	2	290
Aircraft carriers	.....	.....	1	1,936
Total	63	22,379	3	2,226

TABLE XIV.—*Naval estimates for the year 1920–21*

Great Britain	pounds	84,372,300	=$410,597,797
Japan	yen	377,770,376	=$187,207,522
France	francs	905,851,000	=$174,829,243
Italy	lire	406,161,803	=$ 78,389,226

Pound=$4.8665 Franc=$0.193
Yen = .4985 Lira = .193

STATUS OF SHIPS IN FOREIGN NAVIES.

GREAT BRITAIN.

Class.	Oil only.	Oil and coal.	Coal only.	Total in class.
	(1)	(2)	(3)	(4)
Battleships:				
First line	10	16	.....	26
Second line	.....	13	7	20
Battle cruisers:				
First line	3	3	.....	6
Second line	.....	4	.....	4
Cruisers:				
First line	2	.....	.....	2
Second line	.....	5	15	20
Light cruisers:				
First line	44	.....	.....	44
Second line	1	23	.....	24
Destroyer leaders	24	.....	.....	24
Destroyers:				
First line	321	.....	13	334
Second line	42	.....	.....	42
Submarines:				
First line	71	.....	.....	71
Second line	66	.....	.....	66
Fleet submarines:				
First line	8	.....	12	20
Second line	7	.....	.....	7
Cruiser submarines	1	.....	.....	1
Monitor-type submarines	2	.....	.....	2
Seaplane carriers:				
First line	4	.....	.....	4
Second line	2	.....	.....	2
Total	608	64	47	719

NOTE.—This does not include auxiliaries and small craft, or older ships of the types in the above table.

BRITISH NAVY.

	Full complement.	Reduced complement.	Reserve complement.	Care and maintenance party.	Paid off.	Total of cols. 1 to 5.	Total in Navy.	Discrepancy, or ships of unknown status=col. 7—col. 6.
	1	2	3	4	5	6	7	8
Battleships:								
First line	16	.....	7	1	2	26	26	.....
Second line	2	1	2	.....	8	13	20	7
Battle cruisers:								
First line	4	.....	2	.....	.....	6	6	.....
Second line	1	.....	1	.....	2	4	4	.....
Cruisers:								
First line	.....	.....	2	.....	.....	2	2	.....
Second line	.....	1	.....	.....	5	6	20	14
Light cruisers:								
First line	30	1	3	.....	9	43	44	1
Second line	12	.....	.....	.....	12	24	24	.....
Destroyer leaders	12	.....	1	.....	4	17	24	7
Destroyers:								
First line	105	20	73	1	91	290	334	44
Second line	6	.....	10	.....	24	40	42	2
Submarines:								
First line	41	.....	.....	.....	.....	41	71	30
Second line	33	.....	.....	.....	7	40	66	26
Fleet submarines:								
First line	8	.....	4	.....	.....	12	20	8
Second line	6	.....	.....	.....	.....	6	7	1
Cruiser submarines	1	.....	.....	.....	.....	1	1	.....
Monitor-type submarines	2	.....	.....	.....	.....	2	2	.....
Aircraft carriers:								
First line	2	.....	2	.....	.....	4	4	.....
Second line	2	.....	.....	.....	.....	2	2	.....
Total	283	23	107	2	164	579	719	104

NOTE.—In the British Navy a vessel undergoing extensive repairs is usually placed under a "care and maintenance party." When a vessel is "paid off" it does not necessarily mean that she is to join the reserve. Vessels returning from foreign station are often "paid off," meaning that the crew leave her for another vessel and a new crew will come aboard, from immediately up to a few days. Vessels are also said to be "paid off" when they put into home yards for a leave period. The ships in this latter case are not in reserve, but are still commissioned and ready for service as soon as the crew is put aboard. "Reduced complement" probably means that the vessels are operative, but that the complement is not up to full strength. "Reserve complement" probably means that the vessels are in a reserve status, ready for sea on about 48 hours or more notice.

JAPANESE NAVY.

All ships of the first and second lines in the Japanese Navy are believed to be in full commission.

The numbers of these ships in the various classes are:

	First line.	Second line.
Battleships	6	4
Battle cruisers	4	.....
Cruisers	.....	5
Light cruisers	6	1
Destroyer leaders	.....	.....
Destroyers	27	12
Submarines	.....	10
Fleet submarines	.....	.....
Cruiser submarines	.....	.....
Monitor type submarines	.....	.....
Aircraft carriers	.....	.....

FRENCH NAVY.

	Full commission. 1	Reserve commission. 2	Total of cols. 1 and 2. 3	Total in Navy. 4	Discrepancy or ships of unknown status= col. 4— col. 3. 5
Battleships:					
First line	7	.....	7	7	0
Second line	9	.....	9	10	1
Battle cruisers:					
First line	0	.....	0	0	0
Second line	0	.....	0	0	0
Cruisers:					
First line	0	.....	0	0	0
Second line	8	.....	8	8	0
Light cruisers:					
First line	4	.....	4	4	0
Second line	1	.....	1	1	0
Destroyer leaders	0	.....	0	0	0
Destroyers:					
First line	10	.....	10	10	0
Second line	36	.....	36	36	0
Submarines:					
First line	17	.....	17	17	0
Second line	29	.....	29	46	17
Fleet submarines:					
First line	.....	.....	.....	.....	.....
Second line	.....	.....	.....	.....	.....
Monitor-type submarines	.....	.....	.....	.....	.....
Cruiser submarines	.....	.....	.....	.....	.....
Aircraft carriers:					
First line	.....	.....	.....	.....	.....
Second line	.....	.....	.....	.....	.....
Total	121	.....	121	139	18

	Full commission.	Reduced commission.	Total of cols. 1 and 2.	Total in Navy.	Discrepancy or ships of unknown status= col. 4— col. 3.
	1	2	3	4	5
Battleships:					
First line	5	.....	5	5	.....
Second line	4	.....	4	4	.....
Battle cruisers:					
First line	.....	.....	.....	.....	.....
Second line	.....	.....	.....	.....	.....
Cruisers:					
First line	.....	.....	.....	.....	.....
Second line	.....	3	3	3	.....
Light cruisers:					
First line	1	4	5	5	.....
Second line	2	1	3	3	.....
Destroyer leaders	.....	.....	.....	.....	.....
Destroyers:					
First line	11	.....	11	11	.....
Second line	29	.....	29	29	.....
Submarines:					
First line	9	.....	9	9	.....
Second line	13	.....	13	13	.....
Fleet submarines:					
First line	.....	.....	.....	.....	.....
Second line	.....	.....	.....	.....	.....
Monitor-type submarines	.....	.....	.....	.....	.....
Cruiser submarines	.....	.....	.....	.....	.....
Aircraft carriers:					
First line	.....	.....	.....	.....	.....
Second line	.....	.....	.....	.....	.....
Total	74	8	82	82	.....

ENGLAND'S POLICY AND FRANCE.

Source: "L'Eclair," Paris.

5 November, 1920.

The Answer to the Enigma.

"The facts which we have just called to mind show that the policy followed by the English Government with respect to France is intended to destroy all clauses of the treaty of Versailles which might be favorable to our country and permit her recovery.

"Why does our ex-ally follow with such perseverance a line of conduct which can but lead to discord between the two countries, and possibly to a stage of hostility most detrimental to the civilization of the world?

"How can a Government worthy of the name incur the risk, by depriving France of the fruits of her victory, and by favoring on every occasion her age-long enemy, of seeing turn against her the

only nation who would be disposed to be her faithful ally and who has given proof of this under all circumstances?

"I admit that at first this question seemed to me unanswerable, and it is only after long reflection that I have understood, little by little, what the underlying thought of Lloyd-George and his counselors was and why he had adopted this strange policy.

"It would be puerile to attribute the attitude taken toward France solely to motives of domestic policy—that is to say, to a desire to win the good will of the Socialists and the Labor Party—equally puerile to attribute it to purely commercial considerations or to the animosity of the English premier toward Millerand, a feeling which he does not even try to conceal. For the past three centuries the foreign policy of England has been conducted with a logic and steadiness of purpose so powerful that, for my part, I can not believe that, whatever the English premier may be—even a demagogue like Lloyd-George—it can be modified by his will alone.

"I have therefore sought the explanation in an external danger which the men guiding the destinies of England foresee but never mention, a dreaded eventuality for which they wish to prepare without delay.

"My ideas on this subject have been singularly elucidated by a conversation which I recently had with one of our best informed Frenchmen on what is taking place in England. His high position and the connections which he has throughout Europe enable him to understand the hidden reasons for international politics.

"It seemed to me indispensable that French public opinion should be enlightened at once and that we should bravely accept the situation presented to us by supporting our Government in the most energetic measures which it may be led to take in the near future in the imperative interests of France.

"This is the answer to the enigma:

The Coming Conflict.

"The English Government, since the termination of the war, is persuaded that the next great international conflict will be between England and the United States. Perhaps this terrible event may be delayed 10 or 15 years, but it no longer seems within the power of man to postpone it absolutely.

"The war has produced great changes in the United States. First of all, they have created an immense army and have acquired a taste for military glory; they have felt their power, and this nation, which is a veritable mosaic of peoples, has little by little developed a sentiment of unity. The growth of American commerce before and since her entrance into the war has demonstrated to the Government and to public opinion the importance of a large merchant

marine, capable of carrying raw and manufactured products to all countries of the world, to the great benefit of industry and agriculture. Now, this Navy did not exist before 1914. In two years it will be as large as the British merchant fleet, with which it is beginning to wage an implacable competition.

"The United States have likewise entered upon the construction of a war fleet in proportion to the merchant marine, a fleet which, at the end of 1921, will be notably more powerful than the English Fleet. Their building possibilities are unlimited so far as material is concerned. Where England would build one battleship, the Americans can build two, three, four—as many as they wish; the question of money does not weigh with them. If their naval personnel does not equal that of England, they will make it up by numbers.

"Finally, the Irish question, which England unfortunately could not settle when the occasion offered, is envenoming more and more the relations between the two great Anglo-Saxon nations. Fourteen millions of Irish live under the Stars and Stripes, and their hatred of England is so strong that they succeeded in preventing the ratification of the treaty of Versailles, in order not to be subject to the compact of the League of Nations, which would have permitted the limitation of their armament and threatened the liberty of their foreign policy.

"It was rejected, therefore, at the same time as the Franco-Anglo-American agreement, which was for us, as I have said, the keystone of the treaty of Versailles.

"Since, moreover, England can not accept a marked diminution of her world commerce, which is the source of her riches and a vital question for her present as well as future, no other solution but force can be seen for this hitherto peaceful conflict.

"When it takes place, what will be the attitude of France? That is a dominant thought occupying the English Government. As a conflict of this nature can only be decided at sea, the United States being forced to cross the Atlantic to attack England, the rôle of France will be a most important one.

"In fact, nature has given us coasts admirably situated on the Channel and the Atlantic, as well as on northern Africa, which will enable us to provide naval bases excellently adapted for the war which must be foreseen.

"If France should declare herself in favor of the United States, and if she were to equip a certain number of suitably selected points with submarines, she could, with a minimum effort in matériel and personnel, make it impossible for English warships to pass along the coast of France and through the Mediterranean.

"The war from which we have just emerged has shown the immense importance of the submarine in a naval conflict. Even though the Germans were in a very difficult geographical position, their coasts being limited in extent, fronting on seas whose entrances were controlled by the enemy or by neutral nations, they were nevertheless able, by means of their submarines, to hold the fate of the Allies in the balance for two years.

"What would happen then, if we, utilizing the bases which we possess, were merely to place ourselves on the defensive by means of submarines aided by seaplanes? The entire English Navy would be powerless to protect the United Kingdom.

"What would happen if we should put this immense power at the disposition of the United States, while furnishing them the means of refitting and replenishing their supplies after battle?

"Very little thought is needed to show that England should do everything possible to have us on her side when the redoubtable conflict of which I speak breaks loose.

The Tactics of Mr. Lloyd-George.

"The method thus far employed has been that of the firm hand; namely, to place France in a position in which she could be compelled, at the desired moment, to range herself on the side of England; to accomplish this by preventing Germany from being really conquered, and favoring in every possible manner her recovery by preserving her unity and preventing her from being reached by economic means. At the end of a few years, having rehabilitated her finances, Germany would then be in a position to build up a powerful army with an immense war equipment.

"The English Government, fully informed, knows as well as we do that the disarmament of the Prussian Empire thus far obtained is purely fictitious. If the Reichswehr had to be reduced in three months to an effective of 100,000 men, everyone familiar with the true state of affairs knows that Prussia is organizing strong armies, cleverly camouflaged and variously designated. Furthermore, she devoted to this purpose, during the year 1920 alone, a sum amounting to 5,000,000,000 marks.

"As for matériel, while they are delivering to us the guns they used in the war, they have clandestinely begun the construction of new models, and out of the 5,000,000 rifles which had been concealed by the people, not more than 1,500,000 have been returned. Hence, if the Prussian Empire is able to hold out a few years longer, it will reestablish its military power.

"The English Government favors this policy, for it hopes to compel us, when the moment arrives, to act under the menace of a German attack.

"What will it offer to the Boches when that time arrives, to have Germany on the side of England? I do not know, but it is certain that this possibility should be studied, and it explains the perfect good grace with which England invariably supports the German claims, whatever they may be.

"On the other hand, the English Government maneuvers to prevent Germany from paying us the sums which she owes us in virtue of the treaty of Versailles.

"To keep France in an unstable economic condition, in the midst of ever recurring financial difficulties, without the coal necessary to develop her industries, with no reparations for her devastated regions, this is the best way in which to keep her from regaining her strength, both from a military and naval point of view. And this is the course the English Government has followed. When at the conference at Spa it saw that we were determined to seize the Ruhr Basin if the Germans did not take the necessary steps to furnish us with coal, it consented to come to our aid on the condition that we should pay 200 francs a ton for coal, turning over 200 millions a month to the Prussian Reich, thus leaving us in a state of economic inferiority as compared with the Germans and as compared with England.

"This method of procedure enabled England to compel us to buy their coal at an exorbitant price, and keep the English miners in a good humor, at least up to a very recent period.

"England's policy is therefore entirely coherent, and the declaration she has just made concerning property located in the British Empire, throws additional light on the line of reasoning underlying the conduct of the British Government.

"It is evident that if England renounces all interference with the Germans if they violate the treaty of peace as regards reparations, she admits by that very act that such violations is of no importance, and that the financial ruin of France is a small matter, from which, on the contrary, she hopes to derive great advantages. Let us not forget, in fact, that if we are obliged to add each year to the 22 billions of taxes which we are now paying an additional 20 billions for the devastated regions, we would be bankrupt in two or three years.

"In contrast to the English policy, I should like to indicate in a few words what our attitude has been toward England.

What We Have Done for England Since the Armistice.

"First of all, under Minister Clemenceau, we yielded to her on every point. It was then admitted as a dogma that the alliance with England was still the underlying principle of our foreign policy,

the only foundation, they said, on which civilization could be defended and future invasions of related nations prevented.

"In doing this we sacrificed our most important interests, not only in the Orient, the Ottoman Empire, Syria, and Palestine, but also on the Rhine. We accepted an international commission for the administration of the Sarre Basin, a territory which will not be returned to us until after a plebiscite, which will always be uncertain, as the Prussians are free to continue their intrigues with the aid of England.

"We agreed to restore the administration of the occupied regions to Prussian functionaries, who unremittingly incite the population against us and carry on a systematic campaign of calumny against France and her Government.

"At Spa we subscribed to a sort of dispossession from the reparations commission which is now costing us 1.200 millions and which will cost us much more still if we continue to play the rôle of dupes.

"A still more important fact, contrary to the views of the English Government we faithfully supported our ally Poland against the attack of the Bolshevist armies and broke the force of the new invasion, on which the Prussians were counting to help Germany to her feet. In doing so we saved British India, but the English people do not know this. In spite of her Government, by resisting the Bolsheviki, we rendered England the greatest service that any nation has ever performed for her.

"It will be enough to recall the grave apprehensions of the English civil-service functionaries in England, India, a body of picked men who have thus far maintained English rule in an empire of 340 millions of inhabitants with an almost negligible armed force.

"These remarkable agents lately declared to certain of their French friends that they would consider the situation in India as seriously compromised if the Bolshevist propaganda among the Mussulman populations of northwest India was not checked, a propaganda which had been so dangerously intensified during the past year that a great uprising was to be feared in the near future. Now, the English are well aware that they do not possess the necessary military resources to subdue the Mussulman populations of India if they should rebel.

"The idea was fallacious, for it is precisely after their defeat by the brilliant idea of diverting the Bolsheviks from the Orient by leaving them perfectly free to destroy Poland.

"This idea was fallacious, for it is percisely after their defeat by Poland that the Bolsheviks withdrew to the Caucasus and Persia. If they had taken Warsaw, their propaganda would have become irresistible in Asia, where the prestige of force knows no limit.

"France has, therefore, preserved India to England, at least for the time being. It is to the firm policy of Millerand that England owes the security which she has recovered in her Asiatic empire. May she comprehend in time the lesson taught by these events!

What Mr. Lloyd-George Should Have Done.

"For anyone who knows the French character, it is obvious that a different method should have been adopted by the English Government to keep France indissolubly attached to her. He should have supported us in our policy with respect to Germany by permitting us to follow a course that would restore this country to its historic destinies: that is to say, would facilitate the establishment there of a wise federalization for the suppression of Prussian hegemony. He should likewise have aided us from the financial point of view without trying to sell us coal at an exorbitant price and without burdening our exchange by lowering the rate by every possible means. He should have accepted the just claims which we were in a position to formulate in the Orient, and have followed our counsels in Turkey without endeavoring to overthrow Islam by the creation of an Arab empire.

In place of checkmating our diplomacy in order to destroy a secular influence in nowise hostile to England, he should have supported us loyally, as we had a right to expect after the promises made during the war. By winning us with acts of good will, by exercising a little psychology and by not seeking to injure as in order to make us yield, England would always have had us on her side, in both good and evil days.

"As the English Government has chosen the wrong course of action, it is useless now to talk of an English alliance. Such an alliance existed during the war and it has been deliberately destroyed. But we have learned our lesson. No French Government, whatever its strength and prestige, could henceforth demand the smallest effort from the nation in favor of England.

"This is the situation as it exists to-day and as our English friends must see it, plainly stated and stripped of all the subtleties of politeness and of all circumlocutions of diplomacy. In spite of the great war which we waged in common, in spite of the 'incalculable debt to France,' as Sir Douglas Haig expresses it in his official reports which have just appeared, the English Government is in a fair way to lose the only real friend which England had in the world.

"With what sorrow do we reach this conclusion!"

—*Jean Rey.*

BRITISH TRADE EXPANSION IN CHINA.

Source: Reliable.

(13854.)

13 November, 1920.

At a meeting of the China Association at the annual dinner held in London on 11 November, 1920, interesting comments were made upon Anglo-Chinese relations. The association has as its object the fostering and protection of British trade in China. The following extracts from speeches at the annual dinner, as reported in the Daily Telegraph, London, 13 November, 1920, indicate the prevailing trend of thought in this influential trade organization:

"Lord Inchcape, the president, unfortunately was unable to be present, and the chair was taken by Mr. F. Anderson, who in an interesting speech urged this country to throw its influence against outside interference in China, merely because there was a semblance of civil war in that country. The Chinese, he said, would in time work out their own salvation if they were left alone. In order to provide employment for the increasing population of the country, he suggested that the Great Powers should cooperate in a policy of railway unification, and he expressed his strong objection to the policy of spheres of influence."

The chairman, among other remarks, declared for nonpolitical interference in the affairs of China, asserting that:

"In China one group of military Tuchuns suddenly threatened the principal members of the Government in power, forcibly drove them from office, and tried to arrest them. The fallen government took refuge in a foreign legation.

"Now, while it looked as if the people as a whole had taken no part in bringing about the change, yet in reality the movement in which Wu Pei Fu took a leading part had the force of public opinion behind it, and this doubtless to some extent accounted for the sudden collapse of the An Fu government. It was true that the internal economic life of China was not seriously disturbed by ordinary political changes, but there was always the risk of agitation getting out of hand and it would seem to be wiser for the old régime of officials to meet the legitimate demands of the Constitutional party for some form of Parliamentary control. The Chinese were wise in their day and generation to move slowly in regard to fundamental political changes. Changes must come, they were taking place, but he hoped the whole influence of this country would be thrown against any form of outside interference, merely because there might be a semblance of civil war in the land. The Chinese would, in time, work out their own salvation if they were left alone."

Consortium Commended.

The chairman, continuing, said:

"The wisest policy for the present was to provide more employment for the increasing population by developing the resources of the country, and more particularly increasing the means of communication. To this end the reestablishment of the consortium under which the representatives of the Great Powers would cooperate with one another in a policy of the unification of the railways was a most hopeful departure, and he congratulated Sir Charles Addis on the successful progress which had attended his efforts in this direction. He hoped the revival of a policy of cooperation amongst the Great Powers would lead to a final abandonment of the policy of spheres of influence—a policy fraught with danger both to China and to the powers. It was a matter for regret that the Shantung question was still unsettled. There was a general feeling that in this matter Japan had not acted in accordance with either the spirit or the letter of the Anglo-Japanese treaty. If a favorable opportunity arose for negotiating perhaps the present Chinese Government might be in a better position than its predecessors to conclude an agreement with Japan.

"They were all anxious to remain on the most cordial terms with Japan, and he hoped that when a definite renewal of the Anglo-Japanese treaty came under consideration advantage would be taken of the occasion to have the terms so expressed that there would be no chance of a misunderstanding as to their meaning. Then there should be no question that the terms would be carried out in practice. They were doing all they could to impress upon His Majesty's Government the importance of fostering Chinese education under British influence, and they were hopeful that this question would receive the consideration which its importance deserved."

Sir Charles Addis, who is the head of the British banking group forming part of the consortium, and is chief London manager of the Hongkong and Shanghai Banking Corporation, explained the aims of the new China consortium at the China Association dinner, and among other statements declared:

"The fundamental principle upon which the consortium was founded was the substitution of international cooperation in China for international competition, and in its first application he believed it had succeeded in putting an end forever to the mischievous and dangerous system of spheres of influence in China. He said so because at the instance of their respective Governments the groups had once and for all abandoned their separate interests in the existing concessions and options in China, and has merged them in the common pool of the consortium. It was stated in terms at the meet-

ing in New York by each of the groups that their contribution to the common pool comprised all the agreements and options which they possessed or controlled. They had, however, gone a step farther, and had solemnly undertaken that they would not attempt to establish any separate rights or interests in any future business that might come into their possession, but that future concessions would be placed in the pool of the consortium. The establishment of a common measure of the varying interests of the Great Powers had not been accomplished without the exercise of considerable forebearance, and he was glad to have the opportunity of bearing testimony to the consistent loyal support which he received throughout the negotiations at the hands of his Japanese colleagues.

"He was confident that they might continue to rely upon the loyalty of Japan in carrying out in the letter and in the spirit the provisions of the agreement to which she had set her hand. Reference had been made by the chairman to the Shantung Railway. That was an award under the treaty of Versailles, and only those who made it or the League of Nations could undo it. What the consortium could do, and what it had done, was to insure that a stop was put upon the attempt of any power to impair the territorial integrity of China in the future. It was now made clear that any future extension of the Shantung Railway would no longer be vested in the nationals of any individual power, but should inure to the consortium pool. It was the declared policy of the consortium that the whole railway system of China should be unified and that the indefensible right of China to the possession of her own railways should be left undisturbed, subject only to the minimum control necessary to insure the security of the foreign bondholders, to whom the consortium stood in the position of quasi trustees. He fully recognized the heavy responsibilities of those who had to conduct the operations of the consortium. Great care would have to be exercised to respect the very natural susceptibilities of the Chinese people and to convince them that the interests of their country and those which the consortium desired to serve were identical. They recognized that all reform worthy of the name must come from within. As their chairman had truly said, if China was to be saved it must be by her own exertions. He believed she would be well advised to accept the offer of the powers in the spirit in which it was made. If it were continued he believed the consortium would still further knit together those nations which had joined it."

Action of the British Chambers of Commerce in China.

The London press on 10 November, 1920, printed the following account of the conference of the Association of British Chambers

of Commerce in China and Hongkong, which is hailed as an important consolidation of British trade interests in the Far East. The following resolutions were reported to have been passed:

1. Recommending affiliation with the Association of Chambers of Commerce of Great Britain.

2. Recording anxiety to cooperate to the fullest and most practical extent with the manufacturers of Great Britain in the advancement of the Empire's trade.

3. Expressing grave concern at China's assumption of control over the Russian and German concessions at Hankow and Tientsin, and urging upon His Majesty's Government the absolute necessity of securing from the Chinese Government a guarantee for the protection of the interests of the British owners of property in China.

4. Urging His Majesty's Government to bring home to the Chinese Government the inevitable effect upon trade of the present state of lawlessness in China, and in the meantime to combine with other interested powers to arrange a scheme to mitigate the evil.

5. Welcoming the dangerous-drugs act of 1920 but fearing that its effect will be nullified unless China and foreign powers cooperate effectively to prevent the cultivation, import, and sale of opium and its derivatives in China.

6. Drawing the attention of manufacturers in the United Kingdom to the vast opening for British engineering skill and appliances offered by the present railway development in China.

7. Agreeing to the proposed 10 per cent customs surtax on imports for the relief of sufferers from famine, for a period not exceeding one year, provided that the revenue shall be supervised by foreigners.

Britain and Japan. —

The chairman, in a striking closing address, dealt with the association's attitude toward Japan (the Chargé d'Affaires not being present), making particular reference to the case of Mr. Shaw. Referring to the announcement that Mr. Shaw had been released on bail, he said Britons in the Far East were unanimous in their opinion that this was not a satisfactory solution.

If Mr. Shaw had committed an offense he should be speedily and openly tried; otherwise he should be amply compensated for the outrage. The chairman rebutted the charge that the association was anti-Japanese in the sense of opposition to all of Japan's legitimate aspirations. "On the contrary," he said, "we want as far as possible to work with Japan, but when Japan appears to act inimically to our interests we are bound to tell her so."

JAPAN—POLITICAL CONDITIONS.

Source: Reliable.

(11953.)

5 October, 1920.

1. The informant states that he is a member of a party that is working for a universal franchise in Japan and the subordination of the military to civil control. He frankly offered his opinion on the following subjects, expressing the hope that the information might be of use in bringing about increased American cooperation with the Japanese interests that stand for friendship with America.

2. *The military party.*—While there is a strong and growing organization that is working against the military party, the latter, nevertheless, still has *control* of Japan's foreign policy.

3. Prince Yamagata is the strong man in the military party. He is old and it is expected that he will not live much longer. There are students of the Imperial University at Tokyo that hope that he will die soon. They consider him and the whole military party as dangerous leaders of the Japanese people.

4. Tanaka while war minister is controlled by Yamagata.

5. Hara is held as a shrewd, capable people's man in whom there is great confidence. As long as his cabinet stands there is hope that war can be avoided. Hara, while sincerely standing for the people, must, nevertheless, cater to the dictates of the military party, for the reason that with too much opposition Tanaka will resign and thereby render the cabinet powerless to function. Hara therefore submits to a military policy, while at the same time shrewdly increasing the strength of the antimilitarists. Hara and his party will be against war as long as possible. If his cabinet should fall there would be great danger, as the people would lose their strongest leader, and the militarists might bring on a war to strengthen their own position. The majority of them believe that Japan owes her remarkable position in the world to-day entirely to the success of the Japanese Army in defeating Russia. They are confident, arrogant, and conceited. Many of them are of the old school that would wish to die in a war with America only to have their name and fame carried on in Japanese history as military heroes of Japan. Most of them believe they are destined to guide the nation in its necessary ascendancy.

6. *Navy.*—The navy has for a long time not maintained complete cooperation with the army. Due to differences of clan and a more liberal attitude toward democracy, the navy has not always been on good terms with the army and does not at present support army policies.

7. *Financial interests.*—A majority of these are in disagreement with the attitude of the military party. The president of one of the

largest banks in Tokyo has stated that the military party must be put down and subordinated by bankers of Japan, through the control by the latter of Japan's financial resources.

8. *Military service.*—The information confirms the general opinion that military service has become unpopular in Japan. He states that it is generally unpopular, not only now but that it has been for some time. The Government, however, quite effectively suppresses reports of such dislike for military service and is serving considerable punishment for evasion. A recent method for dodging military service consisted in adoption as the only son of another family.

A recent law has remedied the abuses that were practiced through this plan. The informant also stated that the world at large never realized the attitude of the Japanese people, even at the time of Mukden, when the Government was forced to take extreme measures to suppress information concerning the number of threatening letters that were received from parents whose sons were in Manchuria.

9. *Censorship.*—All books published in Japan on politics are censored and extracts deleted that conflict with Government ideas. Chief among these are the books of Kawakami, which must only be taken as a collection of ideas that the Government wishes to propagate.

10. *School instruction.*—Japanese children are still instructed as to the divinity of the Emperor and the superiority of the Japanese. There are many who discredit these theories, but they do not dare to freely express themselves in public.

11. *Japanese occupation in Siberia.*—The majority believe that the pressure of the big powers will be strong enough to cause a total Japanese evacuation of Siberia.

12. *South-Manchurian Railroad.*—The officials of this railroad are desirous of floating a loan in America, and that stock of the railroad be held by Americans. This change of policy is occasioned by the belief that with an increase of American investments in Japanese projects that stronger mutual business interests will result and tend toward better friendship. The railroad recently dismissed a British advisor who was against American interests, and sometime ago stopped the publication of the Manchurian Daily News—a paper that was prejudicial to American developments in Manchuria.

13. *Japanese official courtesy.*—As a side light of interest, the informant remarks that the superficial and insincere courtesy of military officials has its origin in fear. Originally the Japanese feared the effects of their numerous volcanoes. Underneath their external traits this fear still forms a national trait. With the opening up of Japan there was fear of foreign invaders and their superior weapons. To deal with these foreigners, elaborate courtesy and

entertainment became necessary. The influence of this policy still survives. As an additional factor the Japanese believe that each friend for Japan that is gained through entertainment is a friend whose fighting edge will be weakened in a war against their country. It must be considered at the same time that courtesy is universally considered a necessary virtue by the Japanese and that this forms a large part of their motive in extending hospitality to foreigners.

14. *South Sea Islands.*—Many Japanese believe that the military party has brought about the fortification of the South Sea Islands in violation of the mandatory treaty. Under the influence of Mr. Hara, Gen. Hibiki is leading a commission that will make a tour of investigation in these islands. It is reported that he will go as a confidant of Mr. Hara and that he is opposed to such fortifications. Gen. Hibiki was one of the prominent Japanese officers in Europe during the war. Upon his return, in conference with the premier, he brought out the great potential strength of America and emphasized the general underestimation of America's military resources that had existed in Japan. Also that a war with America would be suicide for Japan.

15. *Japanese attitude toward the results of war with America.*—The informant remarks that he had heard from Japanese opinion that Japan could hold out in a war against America for three years.

16. *California question.*—This is not as serious as some people may imagine, and unless it takes an acute turn will not be dangerous, as many of the educated people in Japan appreciate the difficulties caused in California for Americans. The agitation serves, however, as propaganda for the military party.

17. *Liberal Party in Japan.*—The general remarks of the informant concerning this party indicate that there is an element in Japan that is persistently gaining power against the military party and one upon which many fair hopes may be placed. The Japanese that outlined the views in this report states that assistance is hoped for from America in:

(*a*) Investments of American capital in Japanese projects.

(*b*) An increase in representative business men in Japan.

(*c*) The removal of a number of lower-caliber, trouble-making missionaries and their replacement by men of broader ideas.

(*d*) The encouragement of more Japanese students in American universities.

JAPANESE FLEET MANEUVERS OF AUGUST, 1920.

Source: Reliable.

(12908.)

28 October, 1920.

Maneuvers off Tokuyama—Tactics Adopted Each Day for First Five Days.

First day.—All ships left Yokosuka at 3 p. m., 28 August, 1920. After coming to anchor off Tokuyama the submarine squadron and airships delivered an attack, but did not fire torpedoes. The object of the attack was to see if submarines could approach within 600 meters and remain unobserved long enough for torpedoes to reach the ships. This attack was successful, and submarines came to the surface before being discovered.

Second day.—In the forenoon the fleet carried out fog tactical maneuvers.

At night the fleet was divided into "A" and "B" squadrons, submarines and air force comprising the B squadron. A squadron endeavored to escape during moonlight. The air force dropped light bombs on the starboard bow of the first ship and port quarter of the last ship in column. The submarines attacked the A squadron and fired 5 torpedoes. The estimated range was between 3,000 and 4,000 meters. Result, 3 hits; 2 torpedoes ran short. After light bombs were dropped A squadron endeavored to escape torpedo attack by zigzaging.

Third day.—In the forenoon, conducted division gun firing, with the flagship controlling the fire and sending out ranges to the division by wireless. All ships in the division fired simultaneously. In the afternoon the fleet was divided into two equal squadrons. The air force of A squadron reconnoitered and reported B squadron's movements. This was followed by the submarines of A squadron attempting to break through B squadron's defense line, and later by a night attack.

Fourth day.—Fleet was divided into 2 squadrons. Scouts from A squadron were sent out to report the position and movements of B squadron. The admiral was greatly displeased with this maneuver, for the scouts' reports were not received in time to permit A squadron to be properly disposed prior to making contact with B squadron.

Fifth day.—Fleet anchored off Vladimir Bay. All destroyers swept for mines outside and in the entrance to the bay. At the same time the air force made a reconnaissance of the vicinity. When these two operations were completed, the fleet got under way and stood in the harbor. The fleet consisted of the following ships:

First squadron: *Ise* (flagship), *Fuso*, *Hiuga*, *Satsuma*, *Aki*, and *Katori*.

Second squadron: *Haruna* (flagship), *Hi-Yei*, *Haki*, *Kuma*, *Hirado*, and *Chikuma*.

The destroyer force consisted of the *Tatsuta* and *Tenriu* (acting as flotilla leaders) and 25 destroyers.

There were 5 submarines and 4 airships participating in the maneuvers. (The *Wakamiya* acted as sub mother ship and airplane carrier.)

The cruising formation was single column, distance between ships 500 meters. Destroyers were in position on each beam of fleet, 16 to starboard and 9 to port.

Target practice for the major ships was held by divisions. Ranges between 12,000 and 22,000 meters. Speed of target, 13 knots; speed of firing ships, 20 knots; course of target altered. All spotting was from the tops.

After general quarters was sounded, the 14-inch turrets were reported ready, with 6 rounds up for each gun in 1 minute 13 seconds.

The ammunition hoists are operated by hydraulic pressure requiring 100 pounds per square inch to run the hoist.

There are 10 men to each turret gun, 20 to a turret, and 28 in the handling-room crew, making a total of 48 men for a complete turret crew.

The ship carries 100 rounds of ammunition for each turret gun.

Night torpedo-defense practice was conducted with secondary battery at ranges between 800 and 5,000 meters. Speeds of firing vessels and target are unknown. Target course was altered. All spotting was from tops.

The time from sounding of general quarters until all broadside guns were reported ready with 15 rounds of ammunition at each gun was 3 minutes 30 seconds.

The time required to fire 10 rounds from the 5.5-inch and 6-inch guns varied between 1 minute and 1 minute 10 seconds.

One hundred and fifty rounds of ammunition are carried on board ship for each secondary battery gun.

Destroyer Gun and Torpedo Practice.

Gun range unknown; speed of ship, 20 knots; speed of target, 13 knots; course of target altered; destroyer gun firing was by division (2 to 4 boats in a division); all firing was by director control.

Destroyers also held night torpedo practice at 20 knots at a moving target; speed of target unknown. This practice was by divisions, consisting of 2 to 4 boats.

It was stated that the discipline of the sailors, both ashore and on board ship, was excellent. That, although there was considerable sake drinking ashore, the men never became unruly.

FOREIGN POLICY AND FINANCE.

Source: "Scrutator" in London "Sunday Times."

(13848.)

21 November, 1920.

A Wild Paradox.

So much for the army estimates. Let us now turn to the navy as another example of how wise policy may reduce expenditure. Everyone feels it to be a wild paradox that with the German Navy destroyed and with no visible enemy we should still be spending more on our estimates than we did in 1914 with a war threatening. Of what stuff are our dreams of a world under the reign of law made of if our naval expenditure has still to be on a scale which presupposes "a world all devils o'er," all seeking to devour us at sea? Everyone says that now especially, when all the factors of naval power are in the melting pot and no one knows what form it will take in the future, is the time when we can safely indulge economy at sea. But nothing drastic is done. Why? One is almost ashamed to say it, but already there are people in this country who are beginning to see a new naval rival in the United States. It is sheer lunacy, but if one had to say why the facts of naval expenditure are at such disaccord with practical politics, with our ideal aspirations and with our financial necessities, here is the explanation. We must insure doubly and trebly against all sea risks, and so we blunder on, our backs to the light.

There is another way, and it is by a naval agreement with the United States which would not only prevent our ever becoming rivals, but would make us partners in our old historic duty of preserving the liberties of the world in salt sea brine. For reasons into which it is not necessary to enter, the chances of such agreement are good. The only difficulty is as to the terms on which such an agreement should be based. The writer is amongst those who think that naval power will in the future be expressed in a large measure in terms of air power, and therefore it is desirable that our naval agreement with America, if it is attainable, should be expressed in terms that are equally applicable to air and sea.

A Basis of Agreement.

The following heads of agreement are put forward as the basis of an agreement that will compromise the historic divergencies of British and American policy at sea:

(1) The sea and the air shall be subject partly to national, partly to international sovereignty. The limits of national sovereignty. The limits of national sovereignty shall be defined by agreement

between the two contracting powers and afterwards submitted to ratification by the council of the League of Nations. Outside those limits the sovereignty both of sea and air shall be international.

(2) Sea and air, under international sovereignty, shall be free to all commerce at all times except to such articles as may be declared contraband by the league, and no belligerent operations whether on sea or in the air shall take place within international sovereignty except under conditions and for objects approved by the league. But nothing in this clause shall prevent the free intercourse, both in peace and war, between different parts of imperial, union, or federation of States.

(3) For safeguarding international sovereignty in the air and at sea Great Britain and the United States hold their fleets, naval and aerial, at the service of the league. They further undertake not to employ their fleets against each other except in defense of this sovereignty, and to make common cause against all who attack either in consequence of the discharge of its duties under this agreement.

If such an agreement were practicable it would have three results: It would prevent the outbreak of naval rivalry between England and the United States: while leaving each nation responsible for the defense of its own territorial waters, it would divide the task of policing the seas, which is the major part of the work of navies: and it would make impossible either the sinking of merchantmen on the high seas or the bombardment of towns from the upper air, unless indeed the League of Nations sanctioned such operations as punitive measures for the coercion of international crime.

To the detailed arguments for such an agreement it may be possible to return later. Here it is put forward not so much for its own sake but as an example of how policy may limit expenditure even in a department of national policy so sacrosanct as our defense by sea and air.

GERMAN ACCOUNT OF ZEEBRUGGE ATTACK.

Source: Reliable.

(10194.)

12 October, 1920.

An officer from this office recently had the opportunity to converse with a former German naval officer who during the successful British effort to block the Bruges Canal was on duty with a German coast defense battery. This officer willingly described the action in ques-

tion and prepared a rough sketch of such of the principal landmarks as became of importance during the action.

The British attempt to block the Zebrugge Canal was gallantly carried out and, while not completely successful, must be considered a remarkable naval achievement. The raid as a whole showed careful preparation and excellent staff work. Rumors which were current shortly afterwards in Germany that the personnel of our shore batteries were delinquent in their duties on this occasion are entirely false. We simply were in a quandary and committed an error of judgment.

Alongside the mole on the night in question were lying a dozen German light destroyers and torpedo boats. The crews of these vessels had gone ashore on the mole into temporary barracks erected on that structure. Very small complements had been left on board the vessels. On one torpedo boat, however, the officers of the flotilla had gathered for a festival.

The blowing up of the submarine alongside the bridge to the mole and the landing of the storming party from the *Vindictive* took place simultaneously. The attention of the shore batteries was, of course, directed by the firing toward the mole. Our men in barracks were caught off guard and the limit of resistance fell to the torpedo boats. One gun crew manned exclusively by officers did more execution in the enemy's ranks than all the others together.

In the meantime the enemy's blockships approached the entrance of the canal from the northeast, covered by smoke clouds. Our light obstructions apparently had no effect in checking their progress. We on shore were entirely aware of the presence of vessels in that quarter but believed the vessels were our own torpedo boats.

As far as I know, not a shot was fired by the batteries at the entrance of the canal at the approaching ships. Our telephone communications with the mole had been cut by the explosion of the submarine. The one blockship which failed to make the entrance of the canal was sunk, not by our shore batteries, but probably by the guns on the mole. We first opened fire after the blockships had entered the mouth of the canal. A number of motor launches which the British had brought up to take off the crews of the blockships were, however, sunk. Possibly also a large destroyer.

The success of the undertaking was due to mistaking the identity of the British blockship for our own torpedo boats. Their smoke screen was so successful that we could just ascertain the location of the ships and could not make out their outlines. Although at high water we did after two weeks succeed in getting our smaller submarines past the obstructions, the value of our Bruges submarine base was decreased as a result of the action about 80 per cent.

JAPANESE DESTROYERS OPERATING OFF YOKOSUKA NAVAL STATION.

Source: Reliable.

(5975.)

28 October, 1920.

On 6 October, 1920, while en route from Yokohama to Nagasaki the following observations were made of Japanese destroyer mine-sweeping and mine-laying practice off Yokosuka naval station. One photograph was taken of a destroyer, *Hatsushimo* class, while sweeping.

Eleven destroyers were operating in that vicinity. Three pairs (six boats) were conducting mine-sweeping practice. Two pairs of sweepers were of the *Hatsushimo* class and one pair of the *Murakumo* class. They were sweeping at about 10 knots with approximately 500 yards width of sweep. No kite, kite pendant, or kite wake could be seen.

The other five boats, one of *Hayabusa* class and four of *Uranami* class, were operating independently at some distance from the sweepers at about 20 knots. It is believed, from the number of men assembled on the sterns of these boats, that they were planting mines, but the distance from these boats was too great to verify this belief. However, eight boats that could be clearly seen, including these sweeping, were rigged with mine tracks.

In connection with this it was noted, during the subsequent visits to various naval stations, that all smaller destroyers (so-called coast or second-class destroyers) and several other small vessels, and two of the new 5,500-ton cruisers nearing completion were either fitted or being fitted for mine laying. The list includes: *Tama*, light cruiser, building at Nagasaki; *Kitakami*, light cruiser, building at Sasebo; 5 destroyers, *Sugi* class, being fitted with mine tracks at Sasebo; 12 destroyers of various classes, but of later design, with turbine engines, moored in Sasebo Harbor, already fitted for mine laying; 5 destroyers, 2 of *Hatsushimo* class, 3 of *Sugi* class, in Kure Harbor, fitted for mine laying. One small old cable ship is now being fitted with deck mine tracks at Sasebo. One small old wooden vessel, probably also a former cable ship, being fitted with deck mine tracks at Kure.

None of the submarines now building are being fitted for mine layers as far as could be seen from the hulls.

A few (about 20) old mines, Russian-Japanese war type, were stored at Kure, no other mines being seen at any naval station, nor was any mine-sweeping gear, such as kites, etc., seen anywhere. One steel ring net was being made at Kure, rings about 2½ inches in diameter.

MISCELLANEOUS NAVAL ITEMS, JAPAN.

Source: Reliable.

(12925.)

18 November, 1920.

It is reported that the Japanese are experimenting with a new sweep to be used on mine-sweeping destroyers. The nature of this sweep is unknown, but the following ships are to be fitted with it, and if, under tests, it proves successful, all destroyers will then be fitted: *Murasame*, *Asagiri*, *Shirakuma*, and the *Asashio*.

On 18 October 34 trawlers were seen operating in the vicinity of Shimoneseki Straits. These trawlers were all fitted for mine sweeping. The highest consecutive number noted on any stack was "56."

The *Nagato* has completed her steaming trials and is reported to have made 24 knots at full speed. It was further stated that she proved exceptionally steady in a seaway.

Prior to the war it cost approximately 3,000 yen per ton to build submarines in this country. The present cost is said to be 5,000 yen a ton. The various shipbuilding companies that had been awarded contracts for Japanese submarines on a prewar basis are suffering some financial embarrassment as a result of the increased cost, and it is reported that the navy department will endeavor in the coming session of the Diet to obtain an appropriation for the relief of the shipbuilding companies in question.

The navy department originally intended building 120 submarines, but on account of the present high cost of construction there are some rumors to the effect that the total number must be decreased.

Owing to the general business depression the Japanese have experienced some difficulty in obtaining sufficient quantities of steel to carry on uninterrupted their present construction program, and considerable fear is expressed in many quarters that the building program will be greatly delayed by this lack of steel.

A board of officers, consisting of the commanding officers of the Kure, Sasebo, Kawasaki, and Maizuru naval yards, has recently made an inspection of numerous small private shipyards, such as the Yokohama Dock Co., Uraga Dock Co., Ishikawajima Shipyard, and Fujinigata Shipyard, apparently with a view of ascertaining the present building capacity of these yards and to encourage their expansion. All of these yards have been allowed a certain number of vessels in connection with the present navy building program. It would appear from this, as well as from the fact that all private shipbuilding yards and naval yards are working a full force of men on Sunday on naval construction, that the Japanese navy department is endeavoring to complete its present building program at the earliest possible moment.

SMOKE-SCREEN PRODUCER.

Source: Reliable.

(10564.)

25 October, 1920.

A Swedish inventor, who is one of the leading engineers at a large match factory at Tidaholm, has developed a fog-producing apparatus which the naval attaché saw in operation at Mariestad on 30 August, 1920, when a demonstration was made by appointment.

The product of the machine is called a "fog" rather than a "smoke-screen," because it is about the color and consistency of a dense natural fog.

The apparatus has not been patented and is susceptible of further development. It has been adopted by the Swedish Navy and coast artillery.

This report has been delayed in the hope of getting more detailed information about the apparatus, but such has not been forthcoming. Swedish inventors are very cautious about patenting or giving away detailed information regarding inventions of a military nature, as they say that they and a long line of their predecessors have been stung.

The apparatus is very simple in appearance, consisting of two cylindrical receivers for the fog-producing materials and an exhaust pipe leading into a funnel about 3 feet long and 18 inches in diameter at its outer end, at which there is mounted a baffle plate convex to the funnel with a clearance of about 2 inches at the center, increasing to about 3 inches at the periphery. Steam is blown through the receivers, the fog-producing materials are mixed as they enter the exhaust, and flame and a white smoke or fog are blown against the baffle plate at high velocity and with the production of considerable local heat. The machines, with a $\frac{3}{4}$-inch exhaust, are said to produce up to 3,500,000 cubic feet of fog per minute, and those with a 1-inch exhaust up to 7,000,000 cubic feet. When produced the fog rises almost instantly to a height of from 130 to 150 feet, but it is claimed that in calm weather the height of the screen can be varied within limits by regulating the density. At the demonstration witnessed the wind was blowing from 3 to 4, and no such attempt could be made.

It is stated that in recent trials in the Swedish Navy a column of eight ships about 5,000 yards long was completely hidden by fog machines on two destroyers in between 3 and 4 minutes, and that a battleship attacked by a submarine put out a screen in 20 seconds which completely hid her and escaped.

The fog produced is said to be nonpoisonous, but if inhaled it causes coughing.

JAPANESE DESTROYERS.

Source: Reliable.

(13127.)

28 October, 1920.

The Japanese destroyers now being built are of two classes, namely, 835-ton class and 1,345-ton class. A 1,500-ton destroyer is to be started as soon as the plans are completed. The 835-ton class are considered too light for seagoing work and will probably be fitted for mine laying and mine sweeping. The main features of both these classes as regards battery have already been reported on. The other essential features are as follows: Engines all Brown-Curtiss with reduction gear and without cruising turbines, except those building at Nagasaki, which have Parsons turbines, with Parsons rigid frame reduction gear. The 1,345-ton class are said to be designed for 37,000 horsepower (which seems very high) and 37 knots. The 835-ton class is designed for about 27,000 horsepower and about 33 to 34 knots. The larger class have a fuel capacity slightly in excess of 300 tons and a cruising radius at economic speed (16 knots) of over 4,000 miles. The smaller class have a fuel capacity of slightly under 300 tons and a cruising radius at economic speed (16 knots) of over 3,000 miles. Both classes are of the two-shaft installation, two engine rooms, with a high pressure, low pressure, backing turbine, and reduction gear on each shaft. Condensers are of straight-tube, ferrule-end type. Have four speedy type boilers, with cylindrical steam and mud drums, straight tubes $1\frac{1}{8}$ inch, except about four rows near outside that are curved at mud drums, and three $1\frac{3}{4}$ inch outside rows also curved at mud drums. Blower fans are navy type similar to sirocco fans.

Deadwood and stern cut away, giving a draft aft of about $1\frac{1}{2}$ feet. Turning circle four times the length of boat. Complete period of roll, eight seconds.

Spare torpedoes are carried as follows: Those with 8 tubes carry 6 spare torpedoes; those with 6 tubes carry 4 spare torpedoes; and those with 4 tubes carry 2 spare torpedoes.

SINKING OF ITALIAN FLOTILLA LEADER OR SCOUT "C. A. RACCHIA."

Source: Reliable.

(10707.)

18 November, 1920.

The following is a literal translation of a report recounting the circumstances of the sinking of the 1,500-ton flotilla leader *C. A. Racchia.*

The royal scout *Racchia* had orders to escort from Constantinople to Cape Fontana the three steamers *Calvi*, *Melpomene*, and *Thalia*, en route to Odessa to disembark Russian war prisoners and to take aboard for the return trip our conationals coming from Mosca and Petrograd.

At 11 a. m., 23 July, clear weather, fresh winds from NW., in a heavy sea, the *Racchia*, leading the convoy, at about 19 miles from Odessa, struck a mine which formed part of a new barrage laid by the bolsheviks in the safety route at the entrance to the channel which had been previously swept by the Allies. There was no knowledge of this barrage.

The coordinates give the place of sinking as exactly in the safety route, which should have been free of mines.

The mine exploded under boiler No. 2, a little to the starboard, cracking the division wall of No. 1 and No. 2 boilers, breaking the steam pipes. There was a violent projection of water and steam, causing an explosion which blew up everything above No. 2 boiler.

Fortunately the wind had closed the door of the forecastle, preventing the men in there from getting out. However, some of the men caught between the forecastle and the opening in the deck tried to reach the poop deck but fell through and were lost.

The cracks and breaking apart of plates extended up to boiler No. 4, the aftermost, and as far as the forward water tanks, causing the flooding of all four of the boiler rooms and the magazine (whose alarm bells rang shortly after the explosion) as well as the wine storeroom.

The forward water-tight bulkhead of boiler No. 1 was smashed in, thus causing the flooding of the firerooms.

It resulted, then, that from the water-tight engine room bulkhead to the dispensary bulkhead all the compartments were flooded and the ship went down bow first.

AMERICA'S AIR ARMAMENTS.

Source: Translated from "The Yorodzu," Japan, of 9 October, 1920.

(13756.)

It should be duly noted that while engaged in naval extension and anti-Japanese agitation, America is steadily increasing the strength of her air armaments. The Zeppelin factories in Germany will shortly be transferred to America, and it is said that superairplanes will be constructed for freight and passenger traffic across the Atlantic. It is proper to regard the proposal as being due to a desire to contribute to the development of commercial flight in peace times, but there are not wanting signs of American ambitions in the air. As a matter of fact, America is building several superseaplanes

for trans-Pacific service, and several bombing airplanes are detailed to the Pacific Squadron. It should be noted that the day will come when America will control the Atlantic and the Pacific as if they were small points.

If America should go to war with another country, her seaplanes will play an important part, and it does not require a wise man to see that the difference between her air forces and those of her enemy will have an important effect in deciding the course of war. American superairplanes and superseaplanes are not yet realities, but their bombing airplanes are actually in training.

We should not overlook the fact that America is steadily increasing her air forces. She is audacious, but she is not careless in making preparations.

THE SUPERDREADNAUGHTS KAGA AND TOSA (AND OTHER MAJOR SHIP CONSTRUCTION).

Source: Reliable.

(9324.)

28 October, 1920.

The following information on the *Kaga* and *Tosa* has been obtained:

Displacement, 40,000 tons. Designed horsepower, 91,000 at 25 knots. Four-shaft installation. *Tosa* to have Parsons turbines and Parsons reduction gear; *Kaga* to have Brown-Curtiss turbines, type of reduction gear unknown. They are to have 24 small tube boilers (similar to those used in destroyers and light cruisers) with superposed firerooms. The designed economic speed is to be about 13 knots. The actual speeds made by the *Nagato* could not be learned.

All the Japanese major ships now building and built during some years past have two rudders, modeled after British design. They have found this design very satisfactory.

The following is the status of the new dreadnaughts and battle cruisers:

Nagato, completed March, 1920, still conducting steaming trials.
Mutsu, will be completed in about one year.

Kaga, two years to complete.
Tosa, two years to complete.
Amagi, keel not laid.
Akagai, keel not laid.
Atago, keel not laid.
Takao (formerly reported as *Ataka*), keel not laid.

JAPANESE DESTROYERS, KAWAKAZE TYPE.

Source: Reliable.

(9320.)

28 October, 1920.

Their armament was as follows: Three 4.7-inch guns, two on forecastle—one forward of bridge, one abaft bridge—and one on after deck house, all center line. Three center-line twin 18-inch torpedo tubes, one just abaft break of forecastle, one forward of engine-room hatch, one between engine-room hatch and after deck house. Three antiaircraft machine guns in high center-line positions (raised platforms about the height of forecastle); one of these was on top galley superstructure, between stacks. One 3-inch antiaircraft gun outboard, port side, just abaft No. 3 stack. There was so much deck hamper between stacks that it was impossible to locate another 3-inch antiaircraft gun, probably placed in échelon on the starboard side, near No. 1 stack.

Two searchlights, about 24 inches, were seen, one on top of bridge and one on after deck house.

NEW JAPANESE FORTIFICATIONS.

Source: Reliable.

(13760.)

28 October, 1920.

Japanese newspapers state that the army authorities have decided to concentrate their efforts on fortress readjustment and improvement in two places for the current year, leaving the other places for next year. The two places deemed most pressing in view of the present strategical situation are, first, the island of Chichijima, Bonin Islands (latitude approximately 27° 5′ N., longitude 142° 10′ E.); and, second, Oshima (Amami-O-shima) Island, in Kagoshima Prefecture (latitude 28° 10′ N., longitude 129° 20′ E.) Both of these places are to be strongly fortified and will form naval bases.

JAPAN—PACIFIC ISLANDS.

Source: Reliable.

(13324.)

30 September, 1920.

From an informant that has visited these islands it is reported that radio stations are actually in operation on Jaluit, Ponape,

Truk, Yap, and Saipan, and on both upper and lower islands of the Pelew Group. In the lower group the station is on Angaur. In the upper group the station is on Babeltoab.

These island stations form a chain of communication with Tokyo. The station at Saipan is reported as communicating with Tokyo.

The total expenditures of the developments of the army and the navy in these islands exceed 1,000,000 yen.

The greatest amount of trade is with Jaluit. The greatest amount of expenditures have, however, been made at Saipan and the Pelew Islands, where there is the least amount of trade. This is of interest, due to the strategic position which they occupy, one being near Guam and the other between Guam and the Philippines.

H. M. S. "HOOD"—LAUNCHING DATA.

Source: Reliable.

(12408.)

5 November, 1920.

The following information has been obtained relative to the launching data of H. M. S. *Hood:*

Launching weight	tons	22,670
Pressure per square foot on ways	do	2.5
Length of sliding ways	feet	662
Breadth of sliding ways	do	6¾
Overhang of stem before forward cradle	do	108
Overhang of stern abaft after cradle	do	90
Distance from after end of after cradle to after end of ground ways	feet	136
Force on fore poppets when stern lifts	tons	5,000

RADIOTELEPHONE BETWEEN AOMORI AND HAKODATE.

Source: Reliable.

(11394.)

18 November, 1920.

Radiotelephone communication has been successfully established between Aomori and Hakodate, a distance of 60 miles. This is a record distance for Japan.

JAPANESE DESTROYER "TOGA."

Source: Reliable.

(11860.)

28 October, 1920.

The destroyer *Toga*, previously reported as an 850-ton boat with three twin 21-inch torpedo tubes, is 835 tons and has two twin 18-inch torpedo tubes.

AVIATION.

THE ROYAL AERONAUTICAL SOCIETY.

Source: Reliable.

21 October, 1920.

Night Flying.

By Maj. Cecil Baker, D. F. C., A. F. C.

The development of night flying took place entirely on account of the use to which it would be put in war time. So much is this so that without the impulse of war's necessity it is doubtful whether its possibilities would have received very serious consideration. During these two years which have elapsed since the armistice there has been, at any rate to my knowledge, very little night flying done, and it is certain that next to nothing has been added to the experience gained during the war. It is therefore impossible to write at present any account of the growth and possibilities of night flying without its being a story of military night flying during war time, and the experience gained during the war and without a great deal of reference to war flying.

The Development of Night Flying in France.

I am not able to give to this audience any account of the earliest attempts at night flying either before the war or in the early stages of the war. Perhaps there is some one here who will tell us that part of the story when I have finished this paper, and it is probably just as fascinating as the story of pioneer efforts always is.

Early Developments in France.

I believe I am right in saying that in the latter half of 1915 some of the artillery squadrons sent an occasional machine over on bright moonlight nights to drop a couple of bombs on some objective a short distance over the lines.

In 1916 some artillery squadrons sent over as many as three or four machines on bright nights. In the autumn of 1916 a quite considerable amount of night flying was done by an army *F. E. 2b*, Squadron No. 18, and flights as far as Le Cateau and Valenciennes were made. It must have been soon after this time that those in command of the R. F. C. decided that it was worth preparing a squadron to be used entirely for night flying in France.

The First Night-Flying Squadron.

This squadron, No. 100, was brought together and trained in early 1917 by Maj. Christie, D. S. O., M. C., a pilot who, even at that time, had had a lot of night-flying experience. He was doubtful, I believe, at first whether the *B. E. 2c.* or the *F. E. 2b.* was the better machine for the purpose, or, in other words, whether a pusher or a tractor machine. He was prejudiced, no doubt, in favor of the B. E. on account of the fact that it had been flown in England a lot for home-defense purposes. But he decided, quite rightly, on the *F. E. 2b.* as the machine with which the squadron should be equipped. No. 100 Squadron made its debut in April or May, 1917, by a raid on Douai aerodrome. This was the first night bombing raid in France on anything like a formidable scale. It met with a good deal of success, and an amusing account of it will be found in Richthofen's book, The Red Fighter. Two more night-flying squadrons, Nos. 101 and 102, were prepared during the summer. No. 101 started operations at the end of the summer and No. 102 in the autumn. During the autumn of 1917 and the winter of 1917–18 these squadrons carried out a large amount of bombing, their targets being for the most part enemy railway stations and aerodromes. During the period and up to the spring of 1918 very little flying was done on moonless nights. As much flying as possible was done during the moonlight period of each month and during the dark period activities almost ceased. Advances were made in two directions. Longer flights were undertaken and weather conditions which formerly would have been considered too difficult were successfully contended with.

Developments in the spring and summer of 1918.

It is my opinion that the most interesting and important developments commenced in the spring of 1918. The great German attack and advance called out every ounce of energy. If the weather and visibility were such that it was humanly possible to fly, the best possible effort had to be made. It was at this time to a great extent that pilots and squadron commanders discovered that successful flights could be carried out under worse conditions than they had ever thought probable before, and from then onward night flying was not confined to moonlight nights, but continued through the moonless period of the month when nights were fine. It may be mentioned, to show what can be done in spite of the difficulties of darkness, that one of the night-flying squadrons at this time dropped 633 bombs in one night, all pilots doing four separate bombing flights and some of them five flights. The German advance took place during a moonlight period. One of the night-flying squadrons in the Somme area had instructions during the early part of the advance to bomb from

as low as possible certain road junctions on main roads and railheads. In so doing several observers found that they could see transport and troops on the broad white roads which exist in the Somme area. During the remaining days of the German advance they were given orders to search main roads for any transport they could see. Good targets were targets seen by machines flying very low over and over again, and in many cases, as prisoners subsequently testified, were suitably dealt with.

During the spring and summer the first Handley-Page night-flying squadrons began to arrive. The realization of the possibilities of low flying at night along roads and railways and the arrival of the heavy night bombers suggested and brought about a more distinct differentiation between the work carried out by the squadrons of the lighter machines, F. E. 2b, and that of the heavier machines, Handley-Page.

Three more F. E. squadrons came out to France, 58, 83, and 38. One F. E. squadron was allotted to each army. The F. E. squadrons were thus to be used for short range work and were intended for harassing communications on their army front, and for bombing and machine-gunning transport targets by low flying. The Handley-Page squadrons were the G. H. Q. squadrons and were used for long-distance bombing of large targets such as railway centers, etc.

Work of the "F. E. 2b" Squadrons.

I will dwell for a short time on the work of the *F. E. 2b* squadrons. They flew under all weather conditions and under all conditions of visibility, and often over areas of which the landmarks had been to some extent obliterated by the ravages of war. The experience they gained should therefore be of considerable interest in estimating the difficulties of night flying.

Low Flying at Night.

Moreover, I consider that the development of low flying at night in the summer of 1918 was one of the most unexpected and interesting developments in flying during the war, and one which had very great undeveloped possibilities when the war ended, even without vast improvement in machines. It was a branch of flying which was in its infancy and one which would have been an enormously powerful weapon in course of time. There is no scope in a short paper for going into great detail, and I will therefore read you one or two extracts from reports of pilots and observers of a squadron operating on the Somme front (of which I have certain records) at the time of the German retreat in 1918.

8.45 p. m.—First parachute flare dropped at Beugny and followed along Bapaume-Cambrai Road. Transport guns and troops observed in continuous stream, sometimes double banked, proceeding east along Bapaume-Cambrai

Road as far as Bourbon wood; also along road running east from Beaumetz-les-Cambrai to Demicourt; all going east. All movement appeared congested and mixed, comprised of M. T., horse transport, guns, and troops. M. T. observed passing other transport and troops going east. One 112-pound bomb dropped on transport in Beaumetz, 500 feet. One 112-pound bomb dropped on transport on Bapaume-Cambrai Road 1 mile east of Beaumetz, 400 feet. One 112-pound bomb dropped on transport at Boursies, 500 feet. Twelve Véry lights fired at intervals to confirm observations. 500 S. A. A. fired into transport, etc., on main road. Visibility good.

Another report:

3.50 a. m.—Picked up Bapaume-Cambrai Road at Boursies. 3.10 a. m.—Sunken road just west of Canal du Nord. Observed column of 20 two-pair horse transport. Did a dive on these and dropped one 112-pound bomb and four 25-pound bombs from 300 feet. Bombs burst in the middle of this transport and knocked out 6 or 8 teams. Some of the rear teams went into the sunken road just west of the Canal du Nord. There were also two large lorries in here. We were at 200 feet, and dived down right on the sunken road, and hit the teams with one 112-pound bomb. Flew low over the road after smoke had cleared and could see wrecked wagons and dead horses on road. Two hundred and fifty rounds S. A. A. fired into the road. Four teams escaped, two along road to Bapaume and two toward Cambrai. Turned west along Bapaume-Cambrai Road, but found it clear as far as the sugar factory, so turned northwest to Arras.

Another report:

4 a. m.—Column of troops 1 mile in length approximately on Bapaume-Cambrai Road and going south down Lagnicourt-Boignies Road. Fired two white Véry lights at those crossroads, which helped to show up troops. Dropped eleven 25-pound bombs and fired 200 rounds S. A. A. on troops from 500 feet. One Michelin flare dropped after circling round twice, when all troops had dispersed from roads into cover. Visibility good under 1,000 feet.

These quotations will show you better than ordinary words of description how effective this branch of war flying could be made. But it was in the attacking of trains that its possibilities lay beyond all else. Trains were found to be easy to see on any night which was of sufficiently good visibility to follow a railway line. Many successful attacks on trains were carried out. I will leave to your imagination the power of such a weapon properly developed.

It is scarcely necessary to point out that a night-flying machine is much more immune from attack, both from the air and the ground, than a day-flying machine, and casualties were much lower even among night-flying pilots who took the greatest risks. One of our night-flying squadrons had only five pilots and observers killed during the course of over a year's flying, a very small casualty list compared to the average day-flying squadron.

Reconnaissance at Night.

Reconnaissance at night was developed with some success during the summer of 1918. The first efforts to systematically reconnoiter

roads were prompted by the uncertainty as to the imminence of another German attack after their first big thrust at the end of March. Experience showed that night reconnaissance had a distinct value if properly carried out, especially if the enemy's movements were likely to take place along broad and straight roads. It was possible to say definitely whether there was any volume of traffic or not on such roads by low flying. On dark nights parachute flares were necessary; on nights with anything of a good moon movement on the roads could be seen without flares. These remarks do not apply to small and obscure roads or roads well protected by trees. Fittings were devised so that Michelin parachute flares could be carried on 25-pound bomb racks and machines detailed for reconnaissance carried a full load of flares and no bombs.

Time will not allow me to follow this subject further, but I have attached to this paper as an appendix some notes on low flying under different conditions of visibility which I made in the summer of 1918.

Work of the Handley-Page Squadrons.

During the summer of 1918 six Handley-Page squadrons were added to the number of night-flying squadrons in France, two to the army and four to the independent force. The story of the work they did is a long and interesting chapter in war flying, but it is a story which I am not competent to tell. They carried out flights over enormous distances and often under conditions of weather which would have scarcely been dreamed of a year before. They used a certain amount of navigation on their long flights and did not rely entirely on the following of landmarks on their course. Toward the end of the war they were dropping on certain unfortunate places bombs weighing three-quarters of a ton. I went and had a look after the armistice at a place where one of these bombs had dropped, and came away impressed. I have not mentioned "the beach dwellers," the bombers of Zeebrugge and Bruges. It may be said of them that they met the brightest and best in German antiaircraft. The work and development of the home-defense squadrons should be included in any complete story of the growth of night flying during the war. They were the nursery of night fliers, and carried out all the training of pilots. Their main function—that of attack in the air—is a large subject and outside the scope of this paper.

I will now leave the war story of night flying and pass to the various aspects of night flying which are of more interest in connection with the place which night flying may one day take in the large scheme of air locomotion which is destined to develop. But it is difficult to get away entirely from the war, for with night flying there is no present; there is our past experience, which is wrapped

up in the war, and there is the future, which is what our imagination will make it. And to get the right balance they must be taken together.

Night-Flying Training.

A good day pilot has no difficult at all in learning to fly at night. It was found during the war that pilots who had the experience of 30 or 40 hours' flying, which they got at the ordinary R. F. C. school of instruction, needed only about 10 hours' night flying to make them reasonably good night pilots. Night-flying training commenced, of course, with the preparation of pilots for home-defense work, but the need of pilots to fill up gaps in the squadrons in France led to the commencement of systematic night-flying training on a systematic scale. Training started with practice landings on moonlight nights, then practice bombing and cross-country flights on moonlight nights, and finished up with similar training on dark, moonless nights. There were remarkably few casualties in night-flying training, and everything went to show that a good day pilot had little difficulty in flying by night.

Finding the Way at Night.

This is a subject on which a good deal could be written. I will confine myself to a few points which may be considered of importance when considering the possibilities of night flying during times of peace. It is never easy to find the way at night. It is only on a good moonlight night that the way can be found with certainty without the aid of artificial ground lights. It is always a wise precaution to follow good landmarks whatever the visibility. The best landmarks are water and railways. Long cross-country flights on dark nights are impossible in a country of such ground features as England without artificial lights. It should be remembered that though pilots of army night-flying squadrons in France found it possible to find their way to objectives even on dark, moonless nights, it was only because they were operating over a small area and knew every yard of the country they were flying over and every landmark on it, and it was only possible then by flying very low.

In peace-time cross-country flying a very elaborate system of ground lighting would be necessary. They will need to be at frequent intervals along a course, because in misty atmosphere lights can not be seen for any distance. Mist and fog are the great enemy of the night flyer. They hold very much greater dangers for the pilot than they do in daytime. I think statistics will show that mists and fogs are very much more frequent at night than in daytime, particularly in the autumn and winter months. I have over

and over again seen floating fogs drift up and blot out every feature of the landscape in the course of a few minutes. Anyone who commanded a night-flying squadron in France will know what agonizing anxiety these freaks of night weather could give. I will give later my ideas as to the requirements which appear to me to be needed before night flying in peace time can be considered sufficiently safe to be of great value.

Night Flying—Three.

Landing at night.—Experience during war time showed that it was best to arrange the landing lights or flares in the shape of an L, landing parallel to the arm of the L and toward the short arm. These lights should be supplemented with a small searchlight casting its beam down the flare path. A good pilot finds no difficulty in landing at night, and his first attempts usually show him that it is easier than he had thought. The necessity of using as little light as possible for landing during war time showed to what extent landing lights could be dispensed with.

On bright moonlight nights often no landing lights were used at all.

On ordinary moonlight nights only two or three electric bulbs on small standards on the ground and no searchlight. On dark nights a small searchlight was flashed on for a short moment just as the machine was getting near the ground. The electric lights used could be controlled from one switch, and were switched off as soon as a machine had landed.

For safe landing at night it is necessary that a pilot should know the features of the aerodrome where he is landing.

Forced landings are entirely a matter of chance. It is impossible to see the small features which may cause an upset, and except on exceptionally bright nights it is difficult to select a landing place free of obstruction with any certainty. On dark nights it is a question of trusting to luck, and perhaps a magnesium flare, which will probably show you the tree you are going to run into.

I think it was the ever-present anxiety due to the danger of forced landings which made night flying a game which was trying to the nerves.

Night-Flying Machines.

This is, again, a large subject, and can scarcely be more than touched upon. The essential consideration in the design of a night-flying machine must be good upward and downward view, slow landing speed, and a fairly high degree of stability. The latter two requirements are obvious, but the first requirement is only properly brought home by flying under difficult conditions of visibility. It is impossible to find the way under difficult conditions without an un-

restricted downward view. Upward view is also important; on the worst nights there is usually some feature in the sky or clouds which is visible and gives a horizon and enables a pilot to keep an even keel and fly straight until he has reached an altitude of safety. The twin-engine or multiple machine supplies this requirement, and will undoubtedly be the commercial night-flying machine of the future. Moreover, the danger which exists in forced landings at night makes its ability to stay in the air, even when one engine has failed, of especially great value. It may be that a multiple engine aeroplane of the future which can maintain its altitude on half its power will eliminate the dangers of forced landings, and, given a good system of ground lights, will make night flying of the greatest importance in the development of air locomotion.

With regard to war machines, the heavy twin-engine machine with an observer in a forward cockpit with unrestricted downward view and a machine gunner in a rear cockpit was the best machine for heavy bombing. If the war had lasted longer it would have been necessary to perhaps cut down their size and increase their speed and maneuverability or else to greatly increase their powers of defense. The German twin-engine machines were becoming an easy prey, with the help of searchlights, to our night-flying scouts at the end of the war. In fact, on the part of the front on which Maj. Brand's squadron No. 151 was operating so many German twin-engine or four-engine night fliers were brought down in a short time that they completely lost their morale and would scarcely come farther over than our artillery lines. Our Handley-Page squadrons did not suffer much from air attack because the Germans had not developed at all this new branch of war flying.

The consideration of the best type of machine for low flying at night led to more difference of opinion. The matter was being considered toward the end of the war and there was some controversy as to whether it should be of tractor or pusher design. There was no doubt that the power of low flying at night could have been greatly increased by a more up-to-date machine than the *F. E. 2b* with speed and good climbing power. I have attached as an appendix to this paper some notes I wrote toward the end of the war on this matter. In performance a tractor would have been most desirable, but it is doubtful whether a tractor could be designed with the perfection of view required. Opinion was therefore in favor of a pusher machine so designed to provide as far as possible the essential features required.

The Future of Night Flying.

It is quite certain that no good would come of any immediate effort to develop commercial or civilian night flying. The dangers

are too great at present, and all resources are required for the improvement and increase of day flying facilities. But that it will come there is no doubt. One need, as I have said, is elaborate organization for the guidance of machines, and the money required for this could only be supplied when day flying has fully found its feet. Another requirement is the improvement of the multiple engine machine and the consequent reduction of the chances of forced landing. We shall no doubt see very great improvements in this direction during our lifetime.

If mail carrying at night is a feasible idea at this present time from the point of view of flying, such a service would not stand the weight of its cost on mail charges alone, and such costs would be much heavier than in day flying on account of heavier wages for pilots and mechanics and costs of ground lighting. It is probable that climatic conditions in other parts of the world make night flying a much simpler proposition and that England may not be the scene of its first development. If there is any one here who flew at night in Palestine during the war it would be interesting to hear his opinion on this subject.

The possibility of one day cutting, what I might call, landing roads along the main flying routes in England has no doubt occurred to many people. By this I mean the clearing of hedges and trees along a narrow belt, say 100 yards wide. For sometime to come that continental air route will be the only important flying route, and for this route, as air locomotion increases, I think such a suggestion is within the bounds of reason. It sounds like an impossibly big undertaking, but it is a very small one compared to the construction of a railway.

It is only a part of the first preliminary work in making a railway to clear a belt of country in this way. Such a scheme, which seems ambitious with flying in its infancy, may look a great deal more reasonable in a few years' time. The inclosed thickly wooded countryside of England is a bad land to fly over. Add to this the fact that mists and low clouds are frequent. With such a "landing road" night flying would lose a great deal of its risk and flying would take place with regularity and in most weathers. Such a "landing road" could be illuminated at regular intervals by lights connected with the lighting systems of towns and villages near its path. To carry the picture a little further, I imagine an electric cable laid out along this cleared path which would affect sensitive instruments in the night flying machine and show when it is on or off the right path; in fact, the same principle which has been used for bringing ships into difficult harbors. It is easy to lose the way in rainy weather at night and difficult to compete with heavy rain.

Such a cleared way would enable machines to fly very low and land at will when conditions appeared too adverse.

Gen. Sykes showed by what he said at the conference which has just taken place that he attaches the greatest importance to the commencement and advancement of civilian night flying as a most essential factor in the development of air locomotion as a commercial basis. The utility of air locomotion lies in the saving of time. It is difficult at present for an aeroplane to compete successfully with a train over routes of certain distances where the train can travel for 24 hours of the 24 and the aeroplane for only 12 of the 24. In the case of long-distance flights the time taken by aeroplane could be cut in two by the development and use of night flying.

The development of the amphibian-type machine may be of assistance to night flying. If there are no great difficulties in the way, a machine that can land on water or terra firma should advance the possibilities of practical peace civilian night flying. As far as visibility goes, it is easy to follow a coast line at night.

As far as the present is concerned we have proved this—that night flying is a deadly and powerful war weapon, and that it is a branch of war flying that was more capable of rapid development than any other branch of flying when hostilities ceased. Gen. Trenchard, at the air conference, dwelt with emphasis on the importance of night flying in war time, with particular reference to the moral and destructive effects of continuous and uninterrupted bombing. In this connection the progress made in night flying under difficult weather conditions which I have attempted to outline above is of particular importance.

As to the future, we can be reasonably certain that night flying will take its place in air locomotion with the help of the technical inventive and administrative resource and thought that the future years will give to it in the normal development of the most rapid means of transport.

APPENDIX 1.

Notes on Night Reconnaissances and Bombing, July 1918.

Reconnaissance and Bombing.

The experience of the last few months' flying has done a lot to give a more clear and definite idea of the extent to which a good pilot and observer may be expected to observe unlighted movement at night under varying conditions of visibility.

The same two factors as in daytime play the greater part in defining the observer's powers of seeing ground movement:

(1) Background.

(2) Visibility.

Of these two factors, visibility changes to a much greater degree than in day flying, on account of the varying amount of light given by the moon.

Very few nights of a month will give similar conditions of visibility, and an accurate estimate of the value of a reconnaissance can only be made if these conditions are carefully weighed. For this reason it is necessary to describe the possibilities under several conditions of visibility and weather.

Four general types of night will be taken:

(1) Bright moonlight night.
(2) Half-moon night.
(3) Quarter-moon night.
(4) Dark starlight night.

The following observations apply to movement when no light at all is used by the enemy and no lights seen to draw the attention to the possibility of movement.

General Observations.

Even on the best nights very little small detail can be seen without the aid of artificial light. The first sight obtained of movement, except by a machine flying at an extremely low height, will be a dim outline.

Troops or transport on the road will show as dim patches when first seen. If the light is good, an observer may be able to see more detail when directly overhead or directly to the side if he comes down to a very low height.

Movement is easier to see on a straight road than on a winding one.

Trees play a large part in hindering observation, not only by the cover which they afford, but by the shadows which they cast.

Trains will almost invariably be seen first of all by the white trail from their funnels and the glow from the firebox. Often the white smoke shows up long before the firebox glow. It is only by flying very low that sufficient detail can be seen on a bright moonlight night to be able to describe the train and its composition.

In general, it may be said that observation of detail without artifical light requires either perfect visibility and a large amount of moonlight or else very low flying, or else a combination of a degree of both.

Bright Moonlight Night.

On a good, broad road with white surface outline of movement can be seen from 3,000 feet. It is necessary to come down to 2,000 feet or under to be able to observe the type of movement, 1,500 feet would in general be low enough.

In the case of roads lined by trees or dark in surface on account of recent rain or on account of their composition, observation, to be accurate, should be below 3,000 feet.

Vague observations should be verified from at least 1,500 feet.

A very large amount of road movement could be seen from a considerable height on a good road.

On side roads, movement is difficult to see and might be missed, even on a good night, from $3,000 feet.

During the German advance on the Somme the only machines which saw movement on the roads, even with a three-quarter moon, even on a good night, from 3,000 feet.

Those which observed movement on a large number of their flights flew at about 1,500 feet.

The roads examined at that time were not for the most part straight roads.

They were largely side roads and not very clearly defined.

Observation is much easier on such broad, white roads as the Arras-Cambrai and Bapaume-Cambrai Roads.

Given a three-quarter moon, movement out of the ordinary should not be missed on these roads.

Transport, when first seen in moonlight, looks like a series of black dots, and troops like oblong masses, taking more breadth of road, not so much of the white road showing as in the case of transport.

Mist or thick atmosphere on a moonlight night curtails the chance of seeing movement, inasmuch as the area under observation at one time is very much cut down.

During the fine nights in the moonlight period haze often occurs, and a type of night is very common when objects can only be seen in a satisfactory manner for observation of movement directly below and therefore may be missed; and unless the area is examined a great deal more carefully by a long period of flight, often low flying will be necessary.

On a good moonlight night railway movement is easy to observe. White smoke from the engine funnel can be seen from a considerable height. Long trains often have two engines, making them more easy to observe. Railway lines are easy to follow.

Half-Moon Night.

The smaller light percentage given by a half-moon in comparison with a full moon or three-quarter moon high in the sky makes a great deal of difference.

Generally speaking, there is a danger of missing movement from a height of over 1,500 feet. At this height the outline of objects seen

is vague. In order to verify observations or observe objects with certainty a machine must fly below 1,000 feet over the objects. Trees on roads and shadows very easily cause deception in such light.

If movement is carefully concealed it can be easily missed. However, transport or movement on a good open road should be safely picked up from 1,500 feet.

A large stream of movement should be seen from 2,000 feet without fear of error if on a large open road. If side roads or narrow roads are examined greater care must be taken.

A practiced observed seeing dark marks on a road can usually tell the difference between movement and tree shadows, etc.

On a half-moon night the great value of parachute flares begins to come into play. Objects about which there is uncertainty can be examined. Pieces of road obscure on account of trees or dark surface can be looked at.

Flares will show up side roads and tracks about which the light of a half-moon might leave an observer in doubt.

From some points of view a half-moon night is the best. There is sufficient darkness to conceal the machine when not directly overhead and give confidence to pilot and observer. Many pilots and observers who realize how clearly a machine stands out on a night when there is a full moon will fly at much lower heights on a half-moon night. Secondly, on a half-moon night the enemy may not take as much trouble to conceal his movements as on a full-moon night.

On the other hand, on a half-moon night of moderate visibility, wrong conclusions may be gathered and an inaccurate report rendered more easily than any type of night.

The reason is that a certain degree of light is reached, especially when the moon is just below half, when the surface of a road stands out well but there is not sufficient light to make objects of movement stand out except under very favorable circumstances. An observer may thus examine the roads from a fairly low height and not use flares because he thinks the natural light good enough to show troops in transport.

Whereas with this smaller degree of light they may be easily missed except by a machine flying very low or one using flares.

In general it should be easy to detect a large degree of movement on a half-moon night in an area which is not sufficiently protected to prevent a machine flying low.

Quarter-Moon Night.

The light of a quarter moon is of very little use in detecting movement. It is of great value in showing up ground features such as woods, roads, and water sufficiently for a machine to follow its course

without difficulty and examine his reconnaissance area thoroughly by means of flares.

This type of night is the best for bombing targets at a low height.

A good pilot and observer can find an objective without great difficulty and can bomb it effectively from a low height without being seen at any distance by enemy defenses.

Dark Starlight Night.

The principal factor which comes into play in a reconnaissance on a dark night with no moon is the difficulty in accurately following the intended course owing to the difficulty of seeing the ground features.

A broad road may show up from 3,000 feet if the surface is white, and no ground mist. The Bapaume-Cambrai Road can be seen from 3,000 feet on a clear starlight night. But in order to follow less prominent ground features it is necessary to fly lower. Familiarity with the country and the ground over which an observer is flying makes a great deal of difference. Next to good roads, woods show up best as landmarks. Havincourt Wood, for instance, can be well seen on a starlight night from 2,000 feet or a little more.

Water does not show up well.

It takes a well-practiced pilot and observer to examine an area systematically on a dark night. Provided that this can be done, a good reconnaissance can be still carried out provided that sufficient flares are carried and dropped at regular intervals.

On a dark night of poor visibility or dark night with clouds overhead very little can be done. It is extremely difficult to follow an intended course. It is hard, in the first case, to pick up landmarks and easy to lose them again.

On a full-moon night when the noon is low and on a half-moon night the effect of shadows is very considerable.

It is certain that in many cases shadows of trees, etc., have been reported as transport. Most observers who have done a lot of night reconnaissance work have had the experience at times of seeing outlines which they suspected to be enemy movement, and on coming down lower have found that they were looking at strong shadows on a white surface.

It is necessary for observers to be careful about this point and to look carefully at anything of which they only see the shape dimly.

Parachute Flares.

The large parachute flare now in use lights up an area of about half a mile square. The area lit up sufficiently bright to observe detail is only about a square of a mile.

The value of a parachute flare depends almost entirely in the way in which it is used. If it is dropped from a great height it will

have floated a long way from the point to be examined by the time it gets near enough to the ground to give its best illumination and observe ground objects.

The best height for illumination starts about 1,800 feet and goes down to 500 feet. Below this height the area covered is too small. A flare should be used with reference to the wind, so that it will float along the line of road or railway or targets to be reconnoitered. It will thus light up the maximum amount of the object to be inspected.

It burns effectively at a suitable height for about four minutes.

Machines, to get the most of its light, can fly backward and forward over the ground several times. The best light thrown by the flare is often when it is to the side of the object rather than directly over it. It is most important to fly back over the flare or around it in wide circles. If the pilot drops it and then flies straight, comparatively little good is obtained from its light.

A time fuse on a flare would be very useful so as to be able to make it burst at the height required and machines would not have to remain so long over the same area waiting for the flare to reach its best height for observation.

The large parachute flares in use drop very slowly.

Extraordinary detail can be observed by their light, especially at the center point of their illumination.

Several cases have occurred of men being seen running across a road.

In order to examine a road properly they should be dropped at precise intervals, so that the area illuminated by each one overlaps, otherwise a most important part of the road might be missed. Along a road like the Arras-Cambrai Road it is possible to give a reliable report as to whether traffic is abnormal or not if the flares are used well.

One or two flares dropped at long intervals might miss the traffic on the road and produce an unsatisfactory report.

Flares are very valuable for illuminating a definite target, such as a railway station or yard. If one flare is accurately dropped it will light the whole station like daylight, and for a long enough period even to count the rolling stock, etc., in the station.

It must, however, be dropped so as to float over the target.

In a similar manner the flares may be used for inspecting and verifying the damage done by the bombs dropped.

The small launching tube flares are not of any use for general reconnaissance work, as they do not light up sufficient ground and do not last long enough, as well as giving away position of the machine, as they burst directly under it.

If, however, the small object has been seen, at which it is desired to look more closely, they will show it up for a short time if dropped from a very low height.

On moonlight nights verification as to type of transport can be made.

Although it is essential to carry flares which will give a large amount of light, it is equally essential to carry a large number of flares in order that a large area can be inspected thoroughly on one reconnaissance.

It is therefore necessary for the best results to strike a balance between effective illumination from each flare and the carrying of the maximum number of flares.

Effect on Reconnaissance Machines of Enemy Searchlights.

Enemy searchlights are a very great hindrance to reconnaissance even if not supported by antiaircraft or machine-gun fire.

The effect of one searchlight is dazzling, and if a machine is caught in several searchlights the glare of these will blot out the ground and make observation impossible.

If a machine is handed on from one searchlight to another it may be prevented from carrying out its reconnaissance work.

This difficulty is most marked on dark, clear nights, when it is hard in any event to see landmarks. On occasions, searchlights along the Arras-Cambrai Road have given the reconnaissance machines great difficulty. Over certain areas close in to the lines machines have been prevented from making any observations at all.

If a machine gets very much bothered by searchlights along his line of reconnaissanse, he will do best to leave it altogether for a short space of time and come back and try his luck again.

If the antiaircraft defense is concentrated, the average pilot and observer will be kept from flying low and will not carry out their reconnaissance at a height at which the best results can be obtained.

The most effective enemy defense against low-flying machines are machine guns. The machine guns fire red tracer, which, even if not accurately aimed, has a moral effect.

For the most part the country more than ten miles behind the lines, with the exception of special points, such as dumps, unloading points, and certain railway stations, is very little defended.

Rifle fire at night has very little danger and is rarely accurately aimed.

Train Movement.

On a moonlight night train movement on the normal gauge railways is very easy to see, particularly trains moving under a heavy load or standing with steam up. The wide trail of the smoke can be

seen from a distance of several miles. When the moon becomes smaller the smoke can only be seen from a shorter distance. Railways are easy to follow on any moonlight night, and there should be no difficulty in observing any trains with steam up.

It is difficult to observe the composition of a train on any moonlight night unless flying very low over it at a height of less than 1,000 feet.

Similarly, an accurate report on the amount of rolling stock in a station yard requires very low flying. But a train or station yard can be examined and accurate observations made by means of a parachute flare.

On a dark night trains are only visible to a machine close at hand or directly ahead. The smoke trail is only visible at close quarters, but the glow from the firebox may show up for a greater distance, and is more conspicuous on a dark night than on a moonlight night. Cases have occurred where a machine has been looking for a railway on a dark night, and been unable to find it till the glow and smoke of a moving train have been seen and shown the whereabouts of the railway. A railway can be followed on a dark starlight night, but visibility must be good. It is harder to see than a broad straight road.

A double-track is very much more conspicuous than a single-track railway.

Parts of the railway where there are deep cuttings, especially chalk cuttings, seem to show up more than a railway running across very flat country. If there are a lot of woods along and around the railway track, or if the track runs along a wooded valley, it is obscure.

Generally speaking, it should be possible to judge the amount of train movement and its direction without the aid of flares, when road movement can not be seen at all.

Movement on a light railway, whether on moonlight or dark nights, seems to be particularly difficult to observe.

Bombing of Trains.

In the back areas a train is completely at the mercy of a low-flying machine carrying 112-pound bombs. The railways are undefended, with the exception of the large junctions, and behind some parts of the front at any rate there is no very formidable anti-aircraft defence at these.

It is not difficult to glide down to a height of 500 feet or less over a train and make certain of hitting it with at least one 112-pound bomb. A practiced observer flying along the length of the train at a low height will usually hit it unless there is a cross wind. A 112-

pound bomb may be dropped at as low a height as 300 feet without harming the machine, and this has been done on several occasions.

The explosion gives the machine a strong bump, but pieces of the bomb do not seem to fly upward and hit the machine.

It is usually necessary to drop a parachute flare to see the damage done unless the train catches on fire. Trains appear to stop in cuttings sometimes if they suspect one of our machines to be overhead, and then detail is still more difficult to see without a flare. A strong wind at right angles to the direction of the train makes the target more difficult to hit, and if the wind is very strong it may pay to bomb at an angle to the train and up wind.

If a train stops in a station and shuts down its smoke owing to our machines being overhead it is difficult to see, but a parachute flare will usually show it up.

Enemy Concealment of Movement at Night.

Much less movement appears to have been observed at night as a general rule than would be required for the provisioning of the enemy fighting troops in normal times.

This is undoubtedly due to some extent to the care which the enemy takes to conceal movement. No lights are used at all in any of the areas going back to a line at least 15 miles back from the front trenches.

Transport is entirely unlighted on nights when our machines are likely to fly.

There is a great contrast in this respect between our side and the enemy side.

It is probable that in most areas troops and transport have orders not to use the broad white main roads if they can avoid them. A recently captured German army order gave instructions to this effect prior to the attack against the French, and shows that the enemy realize the necessity of these precautions against night reconnaissances. Good pilots and observers flying low have seen much less movement than might be expected on the Arras-Cambrai and Bapaume-Cambrai Roads. Only occasional and isolated transport has been seen, and it may be that similar orders have been issued with regard to these roads.

The enemy are also very careful about lights in their trains even a long distance back from the lines. Instances of trains seen with lights in the windows are very rare.

Very few lights are normally to be seen in villages or on roads as far back as 40 miles behind the lines.

It would be interesting to know if railway movement is controlled and stopped to any extent when our machines are about. There have been many cases observed of trains stopping in stations

when our machines have approached, and not moving out along the line. On several occasions trains have stopped along the line as our machines have approached to bomb it, the troops in it apparently getting out of the train, as riffe fire has been opened from the side of the railway line as the machine flew along it.

The use of parachute flares must do a great deal to warn enemy troops and transport of the whereabouts of our machines and cause them to get under cover or conceal themselves. Better results might be obtained in good moonlight weather by a machine not using parachute flares so long as he flies low enough for good observation.

To sum up, it appears probable that the enemy takes considerable care to conceal movement when our night-flying machines are about, by avoiding broad, white roads or at times by using the cover of trees, houses, etc.

On the other hand, a good deal of movement may be missed by machines not flying sufficiently low and inaccurate reports brought back on account of bad observation.

NAVAL AVIATION STATION AT OPPAMA (YOKOSUKA).

Source: Reliable.

(7210.)

18 November, 1920.

Oppama is the only naval aviation field now in commission and comprises practically the entire naval aviation force. The base is located on Yokosuka Harbor, adjoining Yokosuka Navy Yard, and, from the point of operation, is an ideal site.

All buildings, except the hangars for heavier-than-air craft, are of a so-called temporary construction, though they are well built and will doubtless last for a number of years. The hangars for heavier-than-air craft are of steel or cement, three large hangars being of the most modern construction, and three smaller ones being of antiquated design. While there was no evidence of the intent to build more large hangars, it is certain that they will be forced to enlarge the hangar space when the equipment is brought up to strength. At present the space is adequate for the machines on hand. The technical buildings and barracks were all complete in every noticeable detail, and the only part of the project now under way is the blasting away of a hill to construct a landing field for land planes in rear and at one end of the line of hangars. The launching ramps for sea planes and the landing field for captive balloons were complete.

The unit of the naval air service is a division. It is composed of 10 officers and 150 enlisted men in the heavier-than-air units, and at 5

officers, 3 warrant officers, and supposedly 70 enlisted men (which seems too small a number) in the lighter-than-air units.

There are at present 3 heavier-than-air divisions and 1 balloon division at Oppama. The total complement of the station is 30 commissioned officer pilots, 20 warrant and petty officer pilots, and 600 enlisted men. There are supposed to be 20 planes, both land and water machines, to a division, but Oppama has not a complete equipment. By 1923 the navy department intends having 17 aviation divisions, located as follows: Oppama, 5; Kure, 4; Sasebo, 5; Maidzuru, 1; training, 2; probably at Kasamagara (which is about two hours by train from Tokyo), 2.

It is estimated that with present equipment 50 pilots could be trained in one year. The present course is given on Maurice Farman seaplanes supplemented by the "Yokosuka" type plane. The majority of the pilots at Oppama have received no other training than that obtainable on these types. Seven pilots, however, are graduates of Tokorozawa, and are now training on and experimenting with Sopwith "Pups" which they are flying from the deck of the mother ship *Wakamiya* and landing on a prepared field adjoining Uraga Shipyard.

No accurate estimate could be formed of the ability of the naval pilots because of the limited amount of flying witnessed. All landings witnessed were poor, one man made a "stall landing" and came down very heavily, though not dangerously; another taxied into the ramp at high speed after landing and almost overturned; another landed at least three-fourths of a mile out from the ramps and taxied instead of lying in. It may be added, however, that although little could be learned by actual observation of the naval pilots' ability, that due to lack of modern and powerful equipment, it is safe to assume that they are poorly and inadequately trained because the only work possible on the planes in use is of the most elementary sort.

They had no wireless telephones or any but obsolete American-made radio sets on the planes. There was a wireless station at Oppama for the exclusive use of the aviation base, but very little wireless work has been done, due to lack of good airplane sending sets.

They had several Eastman aerial cameras. The type could not be learned, but it was reported that they were old and bulky. There was a photographic laboratory at the station.

It is reported that there were no radio direction finders at Oppama.

The Yokosuka naval shops are building the Sopwith "Pup" plane. The rate of production is unknown, but five have already been completed. They build the "Yokosuka" type plane. The same shops are also manufacturing a modified Benz motor of 100 horsepower, which is used in a number of the "Yokosuka" seaplanes.

It was reported that these shops are copying the Le Rhone motor. This report, however, was not substantiated, and all Le Rone motors observed were of French make. The Mitsubishi-Kobe Shipyard is manufacturing the Hispano-Suiza 180 horsepower engine. The navy department has purchased the patent rights of all types of Loraine-Deitrick engines and intends manufacturing same in Japan. There are now both officers and mechanics studying in the Loraine-Deitrick shops.

The following are all of the planes at Oppama:

Make.	Engine.	Horsepower.	Number.
Maurice Farman seaplane	Renault	70	9
Do	do	100	3
"Yokosuka" type seaplane	Benz	100–125	7
Short seaplane	Sunbeam	350	1
Tellier flying boat	Bimotor Hispano-Suiza	220–440	1
"Yokosuka" type seaplane	do	180	6
Sopwith "Pup," scout hand plane	Le Rhone	80	5

There also had been five Sopwith flying boats, but they have been wrecked and the motors are now in the shop being overhauled. The planes in commission seemed to be in good shape and well cared for. The Short seaplane was not in commission, but had been used in torpedo-carrying experiments. The torpedo experimented with was said to have been a short 18-inch one weighing about 1,000 pounds. The weight was too much for the plane. It was suspended between floats by makeshift cable slings (or rack).

It was reported that the navy intended using both land and seaplanes in the future, the former wherever coast conditions permitted, and the latter where no landings can be made except on water. They are now experimenting with Sopwith "Pup" flown from the deck of the *Wakamiya* and landing in a prepared field on shore. The *Yamashiro* is being fitted out with a runway on the forward turret for the launching of "Chasse" planes. (It is believed that in the event of hostilities, a number of fast planes would be so carried and launched.) The navy is expecting to be equipped in the near future with Avros and Sopwith "Cuckoos."

At Oppama there are two captive balloons of the Cocotte type ("Elephant Ears"). One is very old and is of foreign manufacture, the other is new and was copied from the first by a Tokyo firm. The workmanship of the copy is excellent and due to the ability of the domestic firms in the manufacture of the quality of silk used in the envelope, is probably as good or better than the original. Hydrogen gas is manufactured from caustic soda and ferrosilicon at the station where there are also facilities for charging bottles. All of the bal-

loon equipment, including winches, generators, bottles and gas compressors was of English design and excepting one Japanese copy of the generator, were all of English make. It is reported that the Japanese Navy has purchased one small modern dirigible from England and expect delivery next summer.

Seaplanes are launched and beached by means of two-wheeled "dollies," operated by hand, up and down narrow concrete ramps, six of which are provided for the group of hangars. Maneuvering runways are built of concrete and the crews appear to handle the planes very easily and quickly. The ramps have considerable pitch, however, and it is doubtful if a heavy modern seaplane or flying boat could be launched or returned to the hangar with the present system.

Both the airplane and motor repair shops were well organized, well equipped and of sufficient size for present needs.

Except for the use of "Chasse" planes flown from vessels naval aviation at present need not be considered as a factor of any great importance.

The "Yokosuka" type plane bears out the impression received from the land plane Nakajima that the Japanese are not successful aeronautical designers.

The casualties in naval aviation were stated by the officer in command of the station to be between 19 and 20 per cent.

Extra pay for aviation personnel is as follows:

Officer pilots, 40 yen per month.
Warrant officer pilots, 25 yen per month.
Noncommissioned officer pilots, 15 yen per month.
Enlisted men, 8 yen per month.

There is some talk of forming three separate air services, namely, army to operate with troops, navy to operate with the fleet, and coast defense to operate in conjunction with land fortifications. The coast defense air force, if adopted, will be made up of both army and navy fliers.

THE FOURTH AVIATION BATTALION AT TACHIAREI.

Source: Reliable. (7210.)

18 November, 1920.

Location and Approach.

Tachiarai is located about 6 miles east of Tozu. It is connected with Tozu by a fairly good wagon road and by a spur of the railroad. There is also a fair wagon road to Futsukaichi.

Airdrome.

The airdrome is in a very large valley, all of which, as far as could be observed, is either wooded or under cultivation, so that the

prepared airdrome is the only available landing area in the vicinity. The present field is about 800 meters square and work is being pushed forward looking to the preparation by clearing, leveling, and resurfacing of the remainder of the allotted area which will give a valuable field of 2,400 by 2,000 meters. The soil is very good for the purpose and should give an excellent surface even in the wet season.

Buildings.

Barracks, quarters, officers' club, headquarters, machine shops, garage, airplane repair, and other technical buildings are already completed. The hangars are six in number and are being built in pairs. One pair is already finished, one is under construction, and ground is being broken for the third. These hangars are of an excellent type; steel, with slate roofs and good type sliding steel doors. They are exceptionally well lighted and ventilated.

Machines.

As at Kagamigahara there is a conglomeration of old machines in use. They are essentially as follows:

Type of machine.	Motor.	Horsepower.	Number on hand.
Maurice Farman	Renault	100	13
	Daimlier	70	
Nakajima, 4 and 5	Hall Scott	150	12
Spad	Hispano-Suiza	220	1
Sopwith-Camel	Le Rhone	120	5

Personnel.

The Fourth Battalion, stationed at Tachiarai, has two companies, with a total strength of 300 enlisted men. There are said to be 15 graduates of Tokorozawa among the pilots, several of whom have also graduated from the observers' school.

Discipline.

The discipline so far as it was possible to observe was excellent.

Flying.

No opportunity was afforded to observe the flying at this station. It was learned that they had had regular battalion flying in addition to the training of students for four months without a serious accident.

Training.

Five students are at present training on Farman machines at Tachiarai. With the exception that the course is started with work on "roleurs," it is the regular six-months' course given at the battalion.

Care of Machines.

It was noticeable that the planes were in much better condition here than at the Second Battalion, and they evidenced good care and efficient repair.

Spares.

There was evidence of only a small quantity of plane spares and spare motors, probably due to the fact that the station is just at present being developed and is not fully equipped.

PARTICIPATION BY THE UNITED STATES IN THE DISTRIBUTION OF GERMAN AERONAUTICAL MATERIAL.

Source: Reliable.

(13832.)

12 November, 1920.

In connection with the resolution passed by the council of ambassadors in Paris on 15 October, 1920, recommending the assignment of an unofficial American representative on the Aeronautical Interallied Commission of Control, it is learned that Marshal Foch's committee in Paris submitted a report to the council of ambassadors to the effect that as the Allies had undertaken to allot 15 per cent of the aeronautical material in Germany to the United States, they considered that this was an undertaking which they were bound to respect independently of the ratification by the United States of the treaty of Versailles.

This report also suggests to the council of ambassadors that as no material had heretofore been set aside for the United States, this question should be placed before the United States Government, and that American representatives attached to the Aeronautical Interallied Commission of Control might give detailed information as to what portion of the material *still left in Germany they wished allotted to them.* It is considered essential, however, by Marshal Foch's committee that the work of destruction of German aeronautical material should not be held up until the arrival of the American representatives, though the committee realizes this would undoubtedly mean that the percentage of material available for allotment to the United States would diminish daily.

It was further suggested by Marshal Foch's committee that the United States should take the allottee's 15 per cent of the proceeds of the sale of aeronautical material.

With reference to the foregoing suggestions made by Marshal Foch's committee to the council of ambassadors the following comments are submitted:

(*a*) From careful observation during the past six months, it is quite definitely known that England, France, Belgium, Italy, and Japan have already allocated to themselves such of the most important and most improved types of airplanes, engines, airships, aircraft armament, aircraft instruments, airship sheds, airplane hangars, and general aeronautical equipment which they have, up to the present time, been able to locate in Germany and which they consider essential to their individual interests. Practically all remaining aeronautical material so far discovered which has any real military or commercial value has been destroyed is scheduled for destruction, or is being otherwise disposed of to the best interests of the above-named powers.

(*b*) There still remains, undestroyed, in Germany considerable aeronautical material, which is considered by the German Government as the property of private citizens and regarding which the German Government has made repeated protests against its destruction. As far as learned, no private property which has been the subject of a special protest by the German Government has as yet been destroyed.

(*c*) The five chief powers concerned in carrying out the air terms of the treaty of peace through their representation on the Aeronautical Interallied Commission of Control have been in the position during the past year to collect most valuable data on German aircraft development, and it is understood that these countries have secured through their representatives very complete technical reports on German aircraft development. Up to the present time it is believed that no American air representative in Europe has been allowed access to or been furnished with any of the technical reports understood to have been collected by the Aeronautical Commission of Control.

(*d*) Although the Aeronautical Interallied Commission of Control has carried out its work during the past year in a most effective manner, information collected during the past few months clearly indicates that many German aircraft manufacturers and inventors have been able to conceal from the searching parties of Aeronautical Interallied Commission of Control plans, drawings, and models of improved aeronautical equipment which are believed to be of vital importance to the future development of military and commercial types of aircraft.

The attitude of the German aircraft manufacturers and inventors has been for some time past and is at the present time most friendly toward the United States and its nationals.

LUBRICATING OILS, AVIATION.

Source: Reliable.

(13817.)

8 November, 1920.

1. It has been stated that practically all lubricating oil used in Italian aviation motors are American oils.

The following tables will show in detail the oils that are used in several different types of motors:

Fiat Co.—For Fiat motors A–10, A–12, A–12bis, A–14:

Gargoyle Mobiloil B, Vacuum Oil Co.:

Specific Gravity—	
At 0° C	0.905
At 15° C	.895
At 30° C	.888
Viscosity, Engler—	
At 50° C	18.020
At 75° C	6.07
At 100° C	3.03.5
Flash point, M. P	230.250°
Combustion point, M. P	280.300°

"*Italia*" *Co.*—For motors H. S. 42 and 44: Castor oil with an acidity not greater than 5 per cent.

Ansaldo & Co., San Giorgio.—For motors 4–E–28 and E–15:

Mobiloil B:

Density, at 15° C	0.897
Flash point	220°
Combustion point	270°
Viscosity, Engler, at 50° C	16

Spa Co.—For motors Spa 6–A, Gargoyle Mobiloil B and Gargoyle Mobiloil BB, of the Vacuum Oil Co.:

Mobiloil B:

Density, at 15° C	0.895
Flash point	245°
Combustion point	285°
Viscosity—	
At 50° C	17.90
At 60° C	10.55
At 100° C	2.79

Gargoyle Mobiloil BB:

Density at 15° C	0.895
Flash point	225°
Combustion point	265°
Viscosity—	
At 50° C	10.95
At 60° C	6.92
At 100° C	2.16

Italian Motors Co. (*Gnome & Rhone*).—For Le Rhone motors: Castor oil with less than 2 per cent acidity. (Very important: Note that with acidity even a little greater than 2 per cent it is very easy to burn out the shaft.)

PORTUGUESE AEROPLANE FLIES FROM PORTUGAL TO MADEIRA.

Source: Reliable.

(11453.)

28 October, 1920.

It has been reported that two Portuguese aviation officers, Capt. Brito Paes and Lieut. Sarmento Beires, left Lisbon on the morning of 18 October with a "Breguet" aeroplane, intending to fly from Lisbon to Madeira, a distance of about 1,500 kilometers, over the sea. The medium velocity obtained on this flight was 180 kilometers an hour. Owing to clouds and low visibility, and also on account of damage to the compass, the aviators failed to find Madeira, and not having any gasoline left to continue the voyage abandoned the aeroplane on their way back to Lisbon in latitude 35.11 N., longitude 13.4 W., 240 miles from Funchal. The aviators were rescued by the British steamer *Gambia River*. The aeroplane disappeared from view soon after the pilots left it, and it is supposed to have sunk.

It would appear, from a route mapped out on a chart afterwards from memoranda supplied by these aviators, that they actually reached the longitude of Madeira some miles north of that island; that they then continued their voyage in the fog, first in a southwesterly, then a southerly, and then a northeasterly direction, passing entirely around the island, and then heading for the mouth of the Tagus, and that they had actually covered two-fifths of the distance from Madeira back to Portugal, when the exhaustion of their gasoline, coupled with the timely sighting of a passing vessel, obliged them to abandon their machine.

AVIATION IN JAPAN.

Source: Reliable.

(9318.)

26 November, 1920.

Aerial mail service between Tokyo and Osaka, or between any other cities in Japan, has not yet been established, and there is little prospect of its being established in the near future.

The Japanese Government is encouraging civilian aviation, but only to a very limited extent. Japan is very backward in civilian aviation—and military aviation, too, for that matter. She is bound to continue so, for she inherently is a copyist in everything, a follower and not a leader. By the time she has secured and becomes proficient in ideas gathered abroad, better ideas have been put into effect in other countries. So she is always at least one lap behind.

Considerable money, however, is being spent by the war department on aeroplane construction, and this may stimulate civilian aviation. Up to the present actual achievements in civilian aviation have been negligible.

AVIATION AT GRAND MANEUVERS, NOVEMBER, 1920, JAPAN.

Source: Reliable.

(12486.)

18 November, 1920.

At the grand maneuvers in November, 1920, the Fourth Battalion was attached to one army and the First Battalion to the other. Each side had 12 planes, comprising Nieuports, Farmans, and Nakajimas, although the latter were not flown. Missions were principally reconnaissance, and bombing was occasionally simulated. No formation flights were attempted and machines were only flown under favorable weather conditions. Not more than 12 planes were in the air at any one time, and air activity in general was rather less than in the preceding year's maneuvers. None of the machines carried wireless or machine guns. A circular white panel with a black sector marked division headquarters.

AEROPLANE LAUNCHING TRACKS ON BATTLESHIPS.

Source: Reliable.

(12484.)

26 November, 1920.

Résumé.—Tracks on *Yamashiro* have been completed; capital ships to carry one combat plane and one observation plane.

The airplane launching tracks on one turret of the *Yamashiro* have been completed. Test flights were successfully made on 6 November. It is reported that all capital ships will now be equipped with two similar launching tracks, and that they will each carry two planes, one combat and one observation (scout).

ORDNANCE.

TORPEDOES AND MINES.

Source: "Die Technik im Weltkriege," Schwarte, Berlin, 1920.

Torpedoes and Mines.

(A free translation.)

The German torpedo has been developed quite independently of foreign countries in the Government naval torpedo factory, and in the torpedo workshop in Friedrichsort. Complete reliability of each individual torpedo and in general an equal value from the technical point of view for all the torpedoes of a certain type was the guiding principle under which the construction and the manufacture of our torpedoes has been carried out, the efficient results of which policy have been attested by individual "record" performances. War has shown that this policy was correct. No other navy has been able to attain similar accomplishments with their torpedoes to those of the Germans. It was with old torpedoes, made in 1905–1906, that Weddingen's boat was equipped; its success speaks for the technical quality of the weapons. There are three basic requirements which the torpedo must satisfy—great effect on the target, long running distance, and high speed.

Effect on the Target.

Even in peace times the explosive charge of our torpedoes was systematically increased. During the war, too, the old 45-cm. bronze torpedoes of the nineties, containing in round numbers 90 kg. of wet guncotton as a charge, were successfully used by our U-boats. All the newer 45-cm. torpedoes contained 120 to 150 kg. of an especially effective charge, which was developed for use at the front through close cooperation between the explosive factory of Kurppamiihle in Upper Silesia and the torpedo laboratory at Kiel. It consisted of a mixture of trinitrotoluol and hexa, which exceeded the effect of the wet guncotton by 30 per cent. This charge, in the transition to the 50-cm. caliber at about 1906, was increased to 200 kg., and to 250 kg. in the most recent type of 60-cm. torpedo, which was constructed and tested in peace times and was first used in battle during the war on the battle cruiser *Lutzow*. No foreign torpedo of the same size had charges that equaled it. And this German charge, in spite of its high explosive power, satisfied in

every way the requirement of unconditional safety in fire; that is, capability of resistance to shell hits of the enemy. A splendid example of this was the injury to the battle cruiser *Moltke*, where a torpedo from an enemy submarine exploded in a torpedo compartment of the vessel without the three partially directly hit and torn war heads of the torpedoes lying on the ship's side being detonated.

Range and Speed.

Range and speed are mutually dependent on each other. Increasing the output of the engine is the fundamental technical requirement. Due attention was paid during the two prewar decades to increasing the size of the torpedo, the employment of better flask material, thus causing an admissible increase in the pressure of the air, and to the economic utilization of the fuel of the torpedo engine by heating the fuel. The length of the torpedo increased from 4.5 m. in the bronze torpedo to 5.6 m. in the newer 45-cm. torpedoes, and then to 7 m. and 9 m. in the modern 50-cm. and 60-cm. torpedoes; the air-flask pressure was increased from 90 atmospheres to 150 and finally 160 to 175 atmospheres. An air-warming device installed in 1903 increased the efficiency by about 30 per cent. The change to the vaporizer, and hence the replacement of the purely compressed-air engine by a steam engine in the year 1911, brought a further efficiency of about 40 per cent. At the beginning of the war, then, ranges of 6,000 m. with the 45-cm. torpedo, 10,000 m. to 12,000 m. with the 50-cm. torpedo, and, in round numbers, 15,000 m. with the 60-cm torpedo were attained. In this way the speed of the different types of torpedoes was increased to 35 or 36 knots. From a purely technical and mechanical standpoint an increase in efficiency was possible in all cases. On the other hand the attempts made in peace time to overcome the difficulties in controlling the course of the torpedo for the first 200 to 300 m., assuming that the engine was to run at full speed, with the corresponding large variations in speed and shocks to the mechanism made it impossible to direct the torpedo at the desired depth. The urgent military necessity of installing in our U-boats torpedoes with the utmost speed possible made it necessary for our experts to try many experiments, but unfortunately it was only during the last year of the war that a 40-knot torpedo was realized.

U-Boat Torpedo.

Aside from the requirement of speed, U-boat warfare presented new problems for the torpedo personnel. On their trips, after weeks in duration, hampered by bad weather and the opposition of the enemy, the U-boats required torpedoes which, when placed in the

torpedo tubes, would always be ready for use. Small technical improvements, such as the omission of the evaporator, which increased the range of the torpedo, were not required by the submarines, but there were required by these boats efficient methods of preservation and for increasing the period of storage before overhaul became necessary. Still more important, but also more difficult to realize, was the requirement for a wakeless torpedo. As compressed air was used in giving the torpedo its initial impulse, there always occurred at the place of firing a small "betrayer" of the U-boat. The diminution and, if possible, obviation of this was a vital matter for the U-boat. For in many cases not only was the success of the attack lost by the recognition of such a track as the enemy by turning aside would avoid the torpedo, but it also directly endangered the U-boat. Destroyers and submarine chasers, the constant companions of enemy merchant-vessel convoys, would rush to the track marking the place from where the torpedo was fired and drop in that vicinity numerous and effective depth bombs, mortally threatening the U-boat. An essential improvement was soon made by the personnel by cutting off the supply of air to the tube, after it had fallen below a certain pressure; this prevented the further egress of the air. This was possible, for even a drop in pressure of 30 atmospheres was sufficient to give to the torpedo the requisite initial speed. Extensive practical trials determined for each launching tube what air pressure was required in the tube to just give an initial impulse to the torpedo. In this manner an essential improvement was obtained, but unfortunately not as complete as desired. It did not become successful until the summer of 1918, but was not employed in the conduct of the war.

The employment of light-draft vessels by the opponent, and the necessity for firing at every possible opportunity, though not always favorable from a submarine point of view, presented a further problem. A heavy sea makes torpedo firing unreliable, as the torpedo, when breaking through the surface in the trough of a wave, is exposed to great speed and depth variations and also unestimable side bends. Therefore there arose the necessity of a device that would insure the torpedo, in a heavy sea, submerging to a greater depth than the normal 3 to 4 feet, and yet hit the lighter-draft vessels. This originated the lever pistol, which consisted of lengthening one of the grip noses of the torpedo pistol perpendicular to the longitudinal axis of the torpedo, which would permit contact with the ship's bottom, thus insuring detonation even though the target was somewhat undershot.

As for the torpedo itself, the U-boat warfare also brought new problems regarding the torpedo armament of the U-boat. In spite of the large number of launching tubes (up to eight), and the provision for storing in the vessel, further equipment was required.

Hence, there was introduced the additional armaments of grating-shaped (?), semirigid, semicollapsible, deck tubes. The increasing defense of the enemy made especially necessary the most rapid development of weapons and an absolutely reliable connection for the officer conning the boat who at the same time controlled the fire of the torpedoes from his control station at the periscope under the conning tower. This, of course, made necessary a systematic expansion and innovation of a large number of technical, mechanical, and electrical order transmission and fire control apparatuses in all parts of the vessel.

Ship and Torpedo-Boat Torpedoes.

No new problems as a result of war experiences were presented to the personnel as regards torpedoes for ships and torpedo destroyers. The work there lay in the field of a further systematic development. At first there was an incessant demand for higher torpedo speed, especially for the destroyer torpedo, and a longer range for both kinds of torpedoes. As already mentioned, the attempt to increase the speed was finally successful. By increasing the flask pressure in the case of battle fire by 10 per cent, a measure that was technically admissible because of the excellent nickel steel flask material of the Krupp firm, a considerable increase in range, in spite of many difficulties, was obtained for all the newer types of torpedoes. This was especially fortunate, as the battle experiences of 24 January, 1915, demonstrated the need of long range fighting. This increase in range, however, necessitates two new demands on the running mechanism of the torpedo. The right gyroscope, in the older type of torpedo being driven by the action of a spring, reached the maximum of its technical efficiency at a range of about 5,000 m. This was remedied in the more recent torpedoes by a clever construction of a twin gyroscope apparatus (so constructed that one could relieve the other), the requisite number of revolutions being maintained by the use of a continued supply of compressed air. The increase in range led to further perfection of gyroscope so constructed that it could be kept constantly at full speed through the action of air. The great battle distances demanded, however, in addition to these improvements in the gyroscopic mechanism, a development of the so-called angle fire device. So long as the torpedo could only be fired in the direction of the tube it was necessary that the tube, rigidly attached to the vessel, should be pointed at the target; in other words, to fire a torpedo it was necessary to maneuver the vessel into position. That was possible only in close fighting, and not when in formation on lines of bearing, etc. With the change of the torpedo to a long distance weapon, a special arrangement, the angular adjustment device, was introduced in the straight course apparatus that

permitted the torpedo to be fired not only in the direction of the tube but at fixed angles, up to 15° from direction of tube. Later this 15° angular interval seemed too large, as in distances of over 10,000 m. considerable movement of the ship was necessary to bring the angular firing device at the desired position. Technical improvements which, in view of the small size of the straight-course apparatus and the necessity of complete reliance on the installation, caused a number of difficulties, and in our most recent torpedoes the interval was decreased to 5°.

Far more thorough than these improvements in the torpedoes were the new technical appliances of order transmission and auxiliary mechanism that were introduced—that long-range torpedoes suitable for military purposes might be made effective. Estimation of the course of the enemy and his speed, by observing and aiming from narrow openings, were no longer sufficient. Hence, there were developed special devices for order transmission and range finding, special sighting telescopes for the torpedo tubes, and finally on the more recent ships, there was installed an especially well-constructed torpedo-control station in the foremast similar to that used for the battery control.

Torpedo Manufacture.

One of the greatest problems for the torpedo personnel was a quantitative one. U-boat warfare, in which the torpedo was the chief weapon, required an always increasing supply of good torpedoes. The total production of torpedoes in the year 1913 was 193. The manufacture of this weapon could only be increased by degrees, as the technical experiments, the basis for confidence in the weapon, demanded that they be carried out gradually at the new plants of the torpedo factory and then the results transmitted to other large torpedo factories.

It was possible to overcome all difficulties and at the same time to have on hand a sufficient supply of new torpedoes. The amount of labor required for this may be appreciated when it is realized that during the last month of the war, September, 1918, four times as many torpedoes, namely 774, were produced as in the year 1913, or, in other words, an increase of 400 per cent in output. It was only by the hearty cooperation of the entire personnel and by the enlarging of the torpedo factory, and by installation of fixed and floating target screens that this increase in output was realized.

Mine and Mine-Sweeping Apparatus.

Only anchored nonobservation contact mines, with a self-acting detonating device, played any important part in the World War. Four main requirements were demanded of this type of mine, viz, great effect on the target; capability for being dropped from a

mine-laying vessel; to remain securely anchored and at the same time floating at a designated depth below surface of the water and to become ineffective upon breaking away from their mooring.

Explosive Charge.

As against a weight of 30 to 40 kg., at the time of the Russo-Japanese War, the explosive charge at the outbreak of the World War was in general from 100 to 150 kg. The charge consisted of wet compressed guncotton or explosives equal to it in effectiveness, such as pyronylia (in Russia), or trinitrotoluol (in England and Germany). Its effect, it was soon discovered, did not meet the requirements of modern warfare, as the underwater protection of modern vessels and the specially designed protective devices diminished their danger area. This would necessitate either the increasing the weight of the explosive charges that detonations occurring at a distance from the hull might be effective or by substituting a more powerful charge of the same weight. In this particular case, increasing the weight of the charge was resorted to. Because of the shortage in materials required for nitration it was necessary to place a limit in Germany on the employment of highly nitrated charges, for example, the mixture employed in our torpedo heads of trinitrotoluol and hexa. It should be noted that with the increase in weight of the charge there was a corresponding increase of buoyancy.

It was necessary to enlarge the mines, this of course necessitating changes in construction and the adoption of other details. This increase in the size of the mines could not be carried out arbitrarily, as the mines were to be laid from different mine layers, the dimensions of which limited the size of the mines. If the activities against surface vessels required more effective and therefore larger mines, the activities against submarines did not. A slight injury to its pressure hull when diving would be a mortal blow to a U-boat. For this purpose the charges of 20 kg. were sufficient. A maximum possible limitation of the explosive effect of the individual mines is, however, conducive to a more efficient barrage, for in that case more mines could be placed with less danger of countermining. The safety distance from mine to mine should amount to about 40 m. in the case of large charges. Especially small mines, mostly anchored, for use against submarines were therefore so constructed that they would assume a position at a maximum depth of 12 to 20 m. below the surface. This permitted a closer placing of these mines, the distance between them corresponding about to the beam of a U-boat. Instead of the usual type of German mine with a charge of about 100 kg. the mining personnel was required, therefore, to manufacture a large number of different types of mines, ranging from the 20 kg. U-boat mine to the large mine with a 200 kg. charge.

Safety of the Mine Layer.

While the immediate safety of the underwater vessel as a mine layer is accomplished by a device that prevents detonation until after the dropping of the mine, the employment of the U-boat as a mine layer presented new problems.

The mine layer must be protected against premature explosions. The mines when in position to be dropped from a submarine are surrounded by water. This necessitated changes in the connections between the mining and anchor, for after being dropped in the water the mine rises to its designated depth through a release mechanism that automatically operates by the dissolving of a salt washer through the action of the water. This factor requires a protective device to prevent the dissolving of this salt washer by the action of the sea water when the mine is being carried ready for dropping from the U-boats as the latter might cruise for weeks before mine laying.

Anchoring.

Depths of over 100 m. marked the limit in general for the use of mines at the outbreak of the war. The great depths in the eastern Baltic and also in the North Sea between the Shetland Islands and Norway led both the Russians and the English to increase the length of their mooring wire. German mine technique followed along the same lines. Besides the use of smaller sized anchor cable which is, however, limited that sufficient durability may be realized, the size of the mine was increased that more buoyancy might be obtained and thus carry the additional weight necessitated by the use of longer mooring cables. As in the case of increasing the charge so also increasing the length of the mooring cable and thereby anchoring mines at great depths has limits imposed by the characteristics of the mine layer. Nevertheless, our technique succeeded, by the use of suitable material, in manufacturing mines that could be laid without difficulty at depths of 300 m.

Disarming Device.

International law as well as our own interests required the protection of neutral shipping against mines that had broken away from their moorings, and were consequently a menace to navigation. A special appliance was devised that permitted the functioning of the mine only when there was a strain on the mooring cables because of the buoyancy of the mine. The military use of mines in this war also made necessary other methods for making a mine ineffective. At times it became necessary to blockade waters not for the duration of the war but only for a certain period of time. As a result of this there was developed a device that insured the mines becoming inoperative after a desired elapse of time. Attempts were made

both in our own navy and other navies to perfect this device by means of clockwork or special fusibles. In the end, however, our navy personnel solved the problem by insuring a break in an electrical circuit by the decomposition of a certain amount of fluid.

Mine Manufacture.

In addition to these constructive problems that were solved during the war by the skill of our mining personnel there was also the difficulty involved in meeting the growing military demands for the manufacture of a sufficient number of mines. The output increased from about 450 mines per month in the fall of 1914 to 2,000 mines per month toward the end of the war, and this was accomplished in spite of the rigid economy demanded in the use of raw materials.

Mine Layers.

The U-boat mine layer was the only vessel that presented special problems for our personnel, among which may be mentioned the stowing and planting devices. In these problems also there were no practical expressions at hand for guidance but as before they were solved by our personnel. Several different types of mine-laying U-boats were built, viz, the tube system, in which the mines were stowed perpendicular in the forward part of the vessel in specially constructed tubes, and the lock system, in which the mines were stowed in the after part of the vessel horizontally on rails and were launched from the stern by special locks. Besides these two types, the torpedo tubes of some of the U-boats were equipped for mine laying so that vessels designed originally as torpedo U-boats could be employed in mine laying when equipped with so-called torpedo mines, which were adapted to the torpedo tubes installed in those vessels.

Detecting and Sweeping Apparatus.

the unforeseen development of the use of mines in this war rendered inadequate the apparatus then in vogue for the detection and the sweeping of mines. In a careful reconnaissance covering a limited area, for example, river mouths or, perhaps Helgoland Bay, or in occasional convoy duty with the fleet through mine-suspected waters, these problems had been foreseen and for this work close to the coast small mine sweepers, usually old torpedo boats had been used. It was essential that the vessels required for these new tasks should be seaworthy and comfortable. Fishing vessels and specially constructed fast motor boats of shallow draft and tenders, designated as the M class, were utilized for this kind of service. In addition to the smooth-working light mine-sweeping apparatus there was the so-called heavy sweeping apparatus which was used principally in sweeping the mines together and tearing them away from their

moorings; the removing of long mine barrages in this manner involved considerable labor.

Improvements of the apparatus at hand were realized by increasing the width of the sweep and the speed of the sweeping. And it was possible to sweep at 11 knots speed, and later on at 15 knots speed, and also to sweep at these speeds with a breadth of sweeps equalling 200 to 300 meters. The great losses in mine-sweeping vessels led further to the introduction of an apparatus that unlike those in use up to this time which were towed astern of the mine-sweeping vessels, was towed from the forward part of the mine-sweeping vessels by means of a fair leader extending from the sides of vessel, this apparatus itself prevented the sweeping vessels from coming in contact with mines in the sweep. This apparatus was so developed that eventually it formed part of the equipment of all war vessels. It has not, however, become universally adopted, but it dealt a death blow to anchored contact mines.

FIRE-CONTROL SYSTEM IN THE GERMAN NAVY.

Source: Ordnance Officer of the "Derfflinger" and Ordnance Officer of the "Lutzow."

(13826.)

9 November, 1920.

At the Battle of Jutland the Germans used methods of direct fire both on their battleships and battle cruisers. On the battle cruiser *Derfflinger* the forward fire-control station was located immediately in the rear of the conning tower. This station was a heavily armored station equipped with various pieces of apparatus which will be described. In the forward fire-control station was the fire-control officer together with the third gunnery officer (who controlled the intermediate-caliber torpedo-defense battery), one ensign, two range-finder men; three petty officers charged with handling the "direction indicator" and five men for transmitting orders. Immediately below the forward control station was situated a receiving station in which were six additional men for transmitting orders, one petty officer, two "talkers," and one ordnance mechanician. The fire-control station was armored with 350-mm. nickel steel. Although this station on the *Derfflinger* was struck by a direct hit during the Battle of Jutland the shot did not penetrate and very little damage was done to the control station. Aside from the fire-control station there were two other control stations, one located aft, known as the after fire-control station, in which was stationed the assistant gunnery officer as reserve, and a further station on the crow's nest located on the foremast, approximately 35 m. above the water line. In the crow's nest were stationed two "spotters," one for the main

battery and one for the torpedo-defense battery. These "spotters" in the crow's nest were in telephonic communication with the fire-control officers in the forward and aft stations.

The central station was located well below the water line in the forward part of the ship and consisted of two rooms. They were protected by the heavy armor and coal bunkers. This central station transmitted all orders from the fire-control officers to the battery. Telephones were used primarily, with speaking tubes as reserve communication system.

The range was obtained by seven large range finders manufactured by the firm of Carl Zeiss of Jena, and operated on the stereoscope principle. These range finders were good for 20,000. On each range finder were two observers, one observer read the range while the other operated the range transmitting telegraph. These range telegraphs transmitted the ranges to the range averaging instrument which automatically averaged the readings of the various range finders. The range finder averaging instrument was located in the forward fire control station and indicated exactly the combined result and individual results of all range finders. The average result was the range used for the ranging shots. The forward fire-control station was also equipped with a periscope the objective of which projected above the upper deck of the forward control station. This periscope was connected to an instrument which electrically transmitted the bearing to battery and which was essentially a "target-bearing transmitter." This apparatus was so constructed that automatic corrections were made for the parallex of the various guns at different ranges. At each gun was also a second pointer on the target-bearing indicator, which followed the movements of the gun in azimuth. In this arrangement, therefore, the train in azimuth consisted of a follow the pointer system. The fire-control officer was assisted in keeping the periscope on the target by a petty officer whose sole duty was to see that the cross wires of the periscope were constantly held on the target. This petty officer had a special lens located on one side of the lower end of the periscope. Two other men in the forward control station were charged with the duty of setting the range on the "target-bearing transmitter," which automatically compensated for the parallex at the various guns.

In the central station were located the range clocks for the main and intermediate batteries. These range clocks were so arranged that the range was electrically transmitted to the guns by means of a pointer system. At the guns there was a special apparatus with two pointers, one pointer controlled by the range clocks which indicated the correct sight-bar range. The other pointer is moved by the sight bar. It is only necessary for the sight setter to keep the sight-bar pointer exactly in coincidence with the electrically moved indicator.

It seems to be well established that the Germans used no artificial means for keeping the guns pointed until after the Battle of Jutland. The training of gun pointers was accomplished by means of the subcaliber target, and was apparently very thoroughly carried out. In general the water line was used as a point of aim, but when firing at extreme range an attempt was made to increase the range of the guns slightly by raising the point of aim to the smokestacks or mast. It is stated on reliable authority that subsequent to the Battle of Jutland the Germans developed an apparatus controlled by a gyroscope, which automatically fired the guns when they reached the proper angle of elevation. This apparatus was also further constructed so that the time lag due to the firing interval was taken into account. Thus with a quick roll the gun is fired at a different elevation than would obtain when the ship is rolling more slowly. It seems to be the opinion of all officers with whom I have spoken that this apparatus would have been of tremendous advantage to the Germans had they had it developed in time for the Battle of Jutland.

The Germans also possessed an automatic clock which signaled to the fire-control officers the time of flight; that is, these clocks rang in the spotting stations and in the fire-control stations at the instant the shell was due to strike. These clocks were of tremendous assistance when concentration of fire was used.

On board the *Derfflinger* in the Battle of Jutland the electrical fire-control apparatus apparently functioned in a practically perfect manner until about 9.15 p. m. (German time), when two of the turrets were blown up. At no time was communication entirely cut off from the battery even though the ship was severely damaged by very heavy fire. The following casualties to fire control on board the *Derfflinger* occurred, due to direct hits or splinters: Five range finders out of commission, the central station filled with poisonous gas, aft fire-control station damaged, forward fire-control station struck by direct hit but no damage to apparatus, halyard shot away and burned up, radio antenna shot away, fire-control system in two turrets completely disabled due to explosion. While the "director system" of the English was known to the Germans at the time of the Battle of Jutland, this system was not installed on board the German vessels until after the Battle of Jutland. In many instances the gunnery officers were very much bothered by the smoke of their own guns and by the smoke from the stacks and guns of the leading ships in line.

In the last stages of the Jutland Battle on 31 May, when the German battle cruisers engaged the British battle fleet, the visibility was very low for the Germans. Attempts were made to take

ranges of the flashes from the guns on the British ships which were firing on the battle cruisers. Spotting was absolutely impossible. As a last resort a gunnery officer of the *Derfflinger* claims to have changed the range by 1,000 m. increments in the hope of a lucky chance hit.

The rate which was set on the clocks was obtained from an apparatus constructed on the same general principles as the one in use in the United States Navy. The ordnance officer estimates the speed of the enemy fleet and the course. In the central station an accurate account is kept of the "spots" and indications of a false rate are shown by this table. It then becomes the duty of the central station fire-control officer to correct this rate. In my discussion with the various ordnance officers I can find no mention of any tracking instruments of a type developed in our Navy. Apparently such device never has been developed in a manner similar to our development. It is probable, however, that the Germans used a device similar to that furnished the submarines for determining the following data (this instrument is known as the "alfa"):

1. Course of the enemy ship.
2. Speed of the enemy ship.
3. Distance to meeting point.
4. Time of meeting, etc.

The Germans attempted in their spotting to bring the salvos on in such a manner that about 25 per cent of the shots are short of the target. If the entire salvo lies over, they arbitrarily drop the range 1,000 yards, as they naturally can not determine the amount by which the salvos are over. It is the opinion of the German Admiralty that shorts at long range can not be actually spotted. Approximately the same method is used, therefore, when the entire salvo lies short. In other words, the Germans claim if the entire salvo lies short it is impossible for the spotter to estimate the amount by which the center of gravity of the pattern lies in front of the target. For this reason if all shots of the salvo are short the spotter arbitrarily increases the range 1,000 yards to bring some of the shots behind the target.

Subsequent to the battle of Jutland there was developed a so-called battle game. This apparatus is the invention of a gunnery officer of the *Lutzow*. The object of this device is to train "spotters" and train the fire-control personnel in the use of the apparatus, and to solve tactical problems concerning the effectiveness of concentrated fire, etc. The Germans claim no use was made of this apparatus until after the Battle of Jutland and that a great number of improvements were made on this apparatus as the result of experience in that battle.

German Comment on British Fire During the Battle of Jutland.

The Germans claim that the English pattern was very small. They noted, however, that in a large number of cases the direct hits were very few considering the size of the pattern and the fact that the English were firing full salvos. In the case of the *Derflinger* it was remarked that the English salvos lay first over and then short and then over. When the English obtained a straddle it was the German policy to immediately start zizzagging. This latter method was resorted to particularly when the German ships were so severely damaged that they could not return the fire, or when the German guns were outranged. It was also stated that the greater number of English shots exploded outside of the turrets and armor, with the result that very little damage was done to the vital parts of the ship as the result of direct fire from the English Fleet. The Germans attribute their success in sinking the *Queen Mary* and other English ships to the high-explosive shells which burst after penetrating. The high-explosive shells were painted half blue and half yellow. They were made of the best quality of nickel steel and contained a very heavy bursting charge.

The Germans claim further that the metal powder cases were a source of particular protection to the German vessels. In cases where the English shell penetrated the German turrets the powder at the guns and on the ammunition hoist was ignited but did not explode. The burning of the powder was slow, and although the entire crew of the turret was killed by the gas the ship was not materially damaged, as would have been the case had the ammunition exploded. The Germans claim further that all of the British ships lost in the Battle of Jutland were lost by direct gunfire, and they attribute their success in sinking the British ships to the delayed action fuse. They claim further that the German losses were due mostly to torpedoes. For instance, the *Pommern* was sunk during the night of 31 May–1 June by a torpedo. From the German description of the battle of Jutland the English are credited with having fired full salvos approximately every 30 seconds. The German system appears to have been to fire half salvos—that is, with one gun from each turret—every 15 seconds. It was impossible to obtain quite this rapidity of fire, however, and the German half salvos were fired usually at a rate of 1 every 20 seconds after the range and rate had been established.

Manufacture of German Fire-Control Instruments.

The German range finders were made both by Goerz & Co., of Berlin, and Carl Zeiss, of Jena. The Zeiss range finders making

use of the steroscoptical principle were regarded very highly by the Germans, who claim that these range finders were never more than 300 m. in error, and that they were very consistent in their results. In order to operate this range finder successfully, however, a specially trained personnel is essential. Great stress is laid on the fact that the proper operation of these range finders is psychological as well as optical, and that, therefore, the personnel for the operation of these instruments must be very carefully chosen and trained. The majority of German ordnance officers who had experience at Jutland, however, claim that with their properly trained personnel the results obtained with this type of range finder are far superior to the results obtained with the coincidence type manufactured by Goerz.

The periscope used by the gunnery officers was manufactured by the firm of Goerz, and contains a very high-powered objective, the highest power being 15. With this high-power objective at ranges up to 8,000 m. it was possible to observe all the details of the target ship. Some of the electrical apparatus used in the fire control was manufactured by Seeman-Schukert Co., while the patents on the most of the other apparatus are held by the firm of Krupp.

Device Against Torpedo Attack.

The Germans came to the conclusion after the Battle of Jutland that the torpedo nets were a source of danger rather than protection. In the case of the *Derfflinger*, the torpedo nets fouled the propeller and had to be cleared. This occurred at the time when the *Derfflinger* was not under fire and no English ships were visible. The Germans used their torpedo-device battery against destroyers, but found that it was extremely difficult to obtain any large percentage of hits even in a day attack against destroyers. Their chief defense against torpedo attacks was their own destroyers, which escorted the fleet and which were used to oppose the English destroyers when an attack was made. At night the Germans regarded their searchlights as a source of danger rather than a protection against torpedo attacks, and for this reason rather hesitated to turn on their searchlights during a night attack, preferring to wait until the destroyers themselves had given away their location either by their own searchlights or by "torching." For night protection the Germans relied entirely upon a screen.

At the Battle of Jutland the Germans had the old type of "Beck" searchlights on some ships. Since 1918 this light has been very much improved by Goerz & Co.

BATTLE GAME ("SCHIESS-SPIEL).

Source: Reliable.

10 November, 1920.

Purpose.

The apparatus is fundamentally a device for the training of spotters but with subsequent developments which permit the application of the entire fire-control apparatus and personnel, and, therefore, can be used to simulate all battle conditions, including visibility, concentration of fire, variation in pattern, etc., exactly as in the case of actual battle practice. The object of the device is to reproduce to the proper scale all operations of an enemy fleet, including changes in course and speed, etc., and to indicate by means of needles (representing splashes to scale) the results of the salvos fired by the observer's ship or division, taking into account all errors of the range clock, range finders, and errors of spotting. Further developments also have been made which permit the apparatus to give a graphic record of the resulting errors and also to show the location of the hits on target ship. Such graphical reproductions (automatically conducted) show clearly the time required for the various operations of fire control, including the time required for the spotter to estimate the fall of the shots and make his corrections.

The apparatus may therefore be used to (*a*) train spotters, (*b*) exercise and train the fire-control party and apparatus, (*c*) train entire battery and fire-control personnel, (*d*) for research and development of fire-control methods and appliances, (*e*) for use with the war game after the opening of fire (tactical problems).

The device has the advantage of arousing and holding the interest of the personnel under training, and consequently is invaluable for arousing a spirit of keen competition and enthusiasm.

Description.

The apparatus is built in case form, being 50 by 40 by 20 cm. The models of ships are built to each 1:5,000, or 2 cm. for 100 m. The results of the salvos are indicated by needles, the location of which as regards dispersion may be varied at will. The models appear to the observer against a background which may be varied to simulate various conditions of visibility. A plate may be inserted to cut off the view of any or all target ships, and smoke screens may be simulated. The movements of the vessels and the automatic operation of the device may be operated by motor or by hand. Concentration of fire may also be employed and the results studied from the automatic record of the fall of shots. When simulating condition of long-range battle practice the model ships may be made to appear partly "hull down" as in actual practice.

The writer was given an opportunity to observe the operation of this device and the manner in which the operations were carried out. The observer is seated about 20 feet from the apparatus with binoculars of such power that the target ships appear exactly the same size as they would actually be in practice, the distance of observer depending on the range and power of binoculars. The following data is furnished the observer by the personnel operating the apparatus, namely, range-finder ranges, bearing of the target, speed of own ship, direction and velocity of wind, etc. The observer (acting as fire-control officer) estimates the course of the enemy ships. Maximum speed of the enemy ships is known or estimated. The observer is then required to give all orders for the control of the fire. The practice may be conducted with or without any additional fire-control apparatus.

In case the practice is conducted without fire-control apparatus the device is used simply as a training device for "spotters" and for training officers to control fire without the assistance of such apparatus. The "spotter" estimates the fall of the shots as shown by the splashes appearing in the apparatus. These splashes may be made to remain visible for as long a period as necessary; however, five seconds is considered a good average duration. As soon as the "spotter" calls out the correction in range and deflection, the proper setting is made on the apparatus. The apparatus thus takes care of the variation of the course and speed of the target ships. The apparatus is also constructed so the time of flight of the shot is taken into account, together with the loading interval and the rate of ammunition supply. By this means the fire-control officer is not permitted to fire at a faster rate than is possible under actual conditions. The apparatus is further constructed so that the danger space for each range and for the type of ship used as target is correctly determined and, therefore, any salvo resulting in hits will record these hits automatically on the sheets prepared for that purpose.

The apparatus is also arranged to be used with all fire-control apparatus in conjunction. When such is the case the range clock, rate of change or range projector, tracking instruments, and communication systems are all brought into use and operated by the fire-control personnel. Under these circumstances the "spotter" simply makes his corrections to the sheet salvos, while the fire-control operations are carried on as under actual conditions.

The apparatus is also arranged so that concentration of fire up to three ships may be obtained. In such case three separate observers are used, each controlling his own fire.

The apparatus is further arranged so that separate sizes of splashes may be used representing the main battery and the intermediate battery.

During the operation of this device the writer was particularly impressed with the extraordinary difficulty in correcting the range unless the deflection is absolutely on. This apparatus shows the extraordinary difficulty of obtaining hits in a day-action torpedo attack. Throughout the entire practice the observer is impressed with the extraordinary lifelike representation of the target ships, the splashes, the variation in course, and the variation in visibility. The results are depicted in the most lifelike reality. This adds considerably to the interest in the training, and the fact that the apparatus is equipped with automatic devices which graphically record the accuracy of the fire control makes especially for competition between various observers and stimulates interest in the training. The fact that the pattern can be varied at will permits the device to be used in the study of the best methods of repelling torpedo attacks, etc. Since all conditions of war can be simulated by this device, together with concentration of fire, it is also usefully applied to the tactical maneuvers which develop during the war game.

While the apparatus is designed to accomplish all of the above-named functions, it is still a comparatively simple piece of apparatus and relatively easy to construct. The chart of a battle is drawn out beforehand, showing the ranges, speed, and courses of the two fleets. This roll is then put on the machine and the range variations, etc., are automatically carried through. In this manner the same battle can be fought over and over again by the same or different observers and the results compared.

Taken all together, the whole device is a most ingenious piece of mechanism which has been developed in the German Navy by an officer who was gunnery officer of the German battle cruiser *Lutzow* in the Battle of Jutland. This apparatus has subsequently been used by a large number of gunnery officers in the German Navy, all of whom are most enthusiastic about the operation of this device. The writer has personally seen and operated this device and finds that it fulfills all the requirements enumerated above. The writer has further interviewed three officers of the German Navy who have made use of this device and who are thoroughly convinced of its great usefulness in the training of "spotters" and fire-control personnel in the use of tactful problems and in the study of the best methods of repelling destroyer attacks.

The following are reports of the commander in chief of the German Grand Fleet in connection with this apparatus:

To the Secretary of State for the Imperial Navy Department, Berlin.
Concerning: Target practice apparatus (battle game).

1. The target practice apparatus (construction of Capt.-Lieut. Schumacher) has been tried out on ships of the line, both large and small.

2. * * * pp.

3. The apparatus has proven its value in all the experiments and also in the instruction and postgraduate courses for battery commanders. It is also a fine auxiliary in the training of the orders-transmission personnel. The use of the apparatus has a very inspiring effect and thereby brings other advantages in its train over the use of the older apparatus.

War conditions have borne witness to the fact that ships are frequently under the necessity of training their own new officers.

The cost of the apparatus bears hardly any relation at all to the other expenses involved (coal, ammunition, windows, boats) when compared to its utility.

4. * * * pp.

5. It is requested that the target practice apparatus be generally installed.

6. * * * pp.

(Signed) VON HIPPER.

EXTRACTS FROM THE EXPERIMENTAL REPORTS OF VARIOUS COMMANDERS.

1. *Friedrich der Grosse.*—The target-practice apparatus has shown very good results in the instruction of officers during target practice. It is an essential aid in vivifying (? simulating) target practice, since the officer in charge not only conducts the firing but can also at the same time observe the hits as they fall. The apparatus permits of target practice without much preparation, as also the materialization of pictures of previous battles.

2. *Kaiserin.*—The experiences on this ship with the apparatus in the AOA (course for first artillery officers on the battleships) are the same as those on the *Friedrich der Grosse.* Target practice has been made so much more interesting that the officers conduct it with a great deal more interest and enthusiasm than has heretofore been the case. It is very desirable that this apparatus be included in the regular equipment of every ship.

3. *Fourth Squadron.*—The general installation of this apparatus is desirable.

4. *Third Squadron.*—* * * and therefore the apparatus is very useful in the artillery courses for ensign and officers.

5. *Posen.*—The apparatus has been used on this ship in the AOA courses and has proved itself very useful. Its special advantages are: (*a*) The simple mechanism which permits one or two persons to work it. (*b*) The visible arrangement of all the slides and handles used in the working of the instrument. (*c*) The possibility of registering immediately and accurately all the lessons and tasks put by the commander, so that their later discussion becomes far more instructive. (*d*) The fine imitation of the actual conditions then existing through model ships, tinting of the background, partial disappearance behind the notch in the sight. Its installation on all ships is warmly recommended.

6. *First Squadron.*—* * * experiences on *Posen* seconded.

7. *Seydlitz.*—* * * It is also possible to allow the opponent to steer correspondingly according to the hits made. The observation of target results afford so vivid an experience that even experienced officers are benefited by the work under these conditions. It is only with the apparatus here considered that one can obtain an effect so mathematically accurate. The apparatus has been in use since June, 1917. The instruction of the personnel is now carried out very much more easily. Target practice in conjunction with this apparatus is very valuable in the training afforded to the transmitting personnel, drilling them to work together with the officer in command to aid him in determining the direction and course of the enemy.

8. *Commander of the reconnoitering ships.*—My opinion is that this apparatus, which has proven its value in the artillery courses for ensigns and officers, ought to be installed on every line ship and cruiser, whatever its size. The war has frequently made it incumbent for every ship to take up the instruction of officers in gunnery. If this apparatus facilitates the instruction of these officers—and that is what it does—it ought to be generally installed. The expense of installation is of hardly any account in the total cost of target practice and should not hinder its introduction.

ORDNANCE WORK BEING CARRIED ON AT KURE ARSENAL.

Source: Reliable.

(13758.)

28 October, 1920.

Armor.

All armor that is made in Japan for naval purposes is made at Kure. The turret-roof armor seen was about 6 inches thick, the turret-face armor about 14 inches thick, and the side armor for ships about 12 inches thick.

It is believed that the Japanese intend decreasing the ship's side and turret-face armor, and increasing the turret-roof and protective-deck armor. This attitude is a result of the lessons learned from the recent war.

Guns.

Guns of all sizes, from 3-inch to 16-inch, both inclusive, were being manufactured and relined. Practically all guns for the navy are both manufactured and repaired at this yard. Numerous odd-sized guns were being built, but as they are intended only as spares for ships equipped with such batteries no further mention will be made of them. The principal sizes on which the Japanese are concentrating their efforts are 16-inch, 5.5-inch, 4.7-inch, and 3-inch antiaircraft.

The 3-inch antiaircraft guns are of two types, namely, 25 caliber, presumably for submarines, and 40 caliber for other classes of vessels.

The 4.7-inch, 50-caliber, are for submarines and destroyers.

The 5.5-inch, 50-caliber, are for light cruisers and secondary battery of larger ships. The navy department has decided not to go beyond this gun for secondary battery purposes.

All of the above guns are solid forgings. Everything above 5.5 inches is wire wound.

Some 14-inch guns were being built, but as the new dreadnaughts and battle cruisers are to be equipped with 16-inch, it is believed that these 14-inch guns are for spares.

There were many 16-inch, 45-caliber guns and mounts in various stages of completion, from uncooled forgings and rough castings to almost completely assembled guns. The highest consecutive number seen on a nearly completed 16-inch gun was 22.

The 16-inch carriage or sleeve is their own design. It is cast in two pieces, the top and bottom halves being bolted together. The bottom half has two recoil and two counterrecoil cylinders; the top cap has only two recoil cylinders. These four recoil cylinders form a square, their centers being equidistant from the center of bore of gun. This arrangement is to prevent slewing and jamming of gun in its sleeve. Each gun has a separate carriage supported by two trunions. The bottom half of the carriage has secured to it a rocker arm to enable loading in any position.

The plugs are hydraulically operated and are worked by one hand lever.

Periscopic sights are used, the sight hoods being on top of the turret roof.

The workmanship throughout appeared to be excellent.

The turret is divided longitudinally, making a separate compartment for each gun. The ammunition hoist is in two stages, hydraulically operated. There are two sets of doors in the hoist, one set between the bottom of the hoist and the handling room and the other set between the first and second stages; these are so arranged that only one set can be opened at a time. The first stage of the hoist is a straight passage from the handling room to directly under the gun carriage; the second stage is a curved passage from the platform at the top of the first stage to the breech of the gun.

The ammunition is transferred from the Camier at the top of the first stage to the loading tray in the second stage.

Each turret is to be provided with a 24-inch Bausch & Lomb range finder, carried in an armored casing on top of the turret roof. These casings are being made at Kure.

An 18-inch gun has been designed, but there is no immediate prospect of building one, as it would require a great expenditure of money, and almost a complete alteration and expansion of the present installation.

Projectiles.

Projectiles of all sizes were being made. The 12-inch, 14-inch, and 16-inch ones had two caps, namely, soft cap and wind cap. The soft cap for 16-inch shells was about 18 inches long. It was peened to the shell; after this had been done, a wind cap, about 8 inches long, was screwed to the end of the soft cap. The point of the shell was then machined a second time to give a smooth ogival. There were two copper rotating hands shrunk on near the base, the

groove in the shell having been roughened to prevent the rotating hand from turning. These shells are apparently identical with "Hadfield armor-piercing shells."

All large caliber shells were bored out to be fitted with base fuses. Some fuses, about 2½ inches in diameter and 8 inches long, were seen.

Powder Charges.

All guns up to and including 5.5-inch use either fixed ammunition or the powder charge is contained in one metal case. From 5.5-inch to 8-inch, inclusive, two powder charges are used, the forward one being contained in a silk bag, the after one in a metal case; above 8-inch, silk bags only are used. Excessive cost is the only reason for not using a metal case for the last powder charge in guns above 8-inch. The metal powder case is used solely as a safety precaution. These cases, as well as powder tanks, are being manufactured at Kure.

Torpedoes.

Much work was being done on torpedoes. There were approximately 250 air flasks, of all sizes, in and just outside the shop, in various stages of completion, and about 75 completed air flasks stored outside the shop. There were also numerous piles of bulkheads, engines, and other parts lying about. The complete torpedo, with the possible exception of the war head, is manufactured at this yard.

Kure is making nearly all of the air flasks for Japanese torpedoes, and have found drawn forgings to be most satisfactory. The few air flasks bought abroad are said to be quite unsatisfactory. Three types of torpedoes are in general use, namely, 21-inch, superheated, for first-class destroyers and above; 18-inch, superheated, for second-class destroyers; and a short 18-inch, said to be superheated, for submarines.

The maximum range of the 21-inch torpedoes is 15,000 meters. The designed speeds are as follows: 15,000 meters at 25 knots, 12,000 meters at 28 knots, 10,000 meters at 30 knots; maximum speed, 30 knots. The Japanese built 21-inch torpedoes for England during the recent war.

The maximum range of the 18-inch torpedoes for second-class destroyers is about 8,000 meters, and the maximum speed 30 knots.

The maximum range of the short 18-inch torpedoes for submarines is 4,000 meters. Its designed speeds are as follows: 4,000 meters at 35 knots, 1,000 meters at 41 knots.

The war heads for submarine torpedoes are of a different design from the war heads of other torpedoes, and are reported to carry a proportionately heavier explosive charge.

Both submerged and above-water torpedo tubes are manufactured at Kure. All torpedoes are discharged from the tubes by compressed air.

The Japanese have been unable to eliminate the torpedo-wake smoke, and it is apparently quite pronounced.

BARR & STROUD ANTIAIRCRAFT RANGE FINDERS.

Source: Reliable.

(13786.)

10 November, 1920.

The latest antiaircraft range finder at present in use on board ships of the British Navy is the Barr & Stroud.

This range finder is a coincidence range finder with a vertical separating line and is designed to measure either the height or the range of aircraft.

This instrument has evidently given satisfaction, as a considerable number have been ordered and a number are on order at present, both for the British Navy and for the Japanese Navy.

A new naval *height and range finder* for antiaircraft is about to be tried, however. It works on the same principle as the *UB–2* type field artillery antiaircraft range finder. This instrument is also of the coincidence type, but with an inverted strip field.

Until the present time there was never supplied a stereoscopic antiaircraft range finder for use on board ship. There has been supplied stereoscopic range finders for other purposes but not for antiaircraft work.

Barr & Stroud do not think that the stereoscopic range finder would be successful as an antiaircraft range finder on board ship, and are informed, *on the best authority*, that the German Army used stereoscopic range finders against aircraft in the earlier days of the war, but ultimately abandoned them in favor of coincidence range finders.

At Barr & Stroud's works there were sample German stereoscopic range finders, and in every case the nature of the observation was by moving an indicator to coincide with the stereoscopic images to obtain the reading. They think it would be very difficult to use such a range finder observing on aircraft, as it has to be directed more steadily on the target than the coincidence range finder. A modified stereoscopic range finder might be used with success, but they would not recommend it.

The range finders constructed by Barr & Stroud for antiaircraft work are 1 m. and 2 m. base, and now they are considering the design of a range finder of 3.66 m. base, horizontal type.

In the case of Barr & Stroud's range finder type FT–29 the range taker looks into the range finder trunnionally, i. e., along its horizontal axis, and in this way does not require to move backward as the range finder is elevated.

TARGET PRACTICE, SECONDARY BATTERY OG IKOMA.

Source: Reliable.

(3310.)

28 October, 1920.

On 6 October, 1920, while off Sagamiwan Bay, the following observations of the *Ikoma's* secondary battery target practice were made.

The *Ikoma*, armored cruiser, 13,750 tons, was conducting secondary battery elementary practice in Sagamiwan Bay. Course of firing ship west, course of target west. A steady course was maintained. Speed of target about 5 knots. Firing vessel kept target bearing almost abeam during the three-fourths of an hour that this vessel observed the firing, therefore the *Ikoma* (firing vessel) must also have made about 5 knots. Wind NNE., force 3, sea smooth. Target to southward of firing vessel.

The target was of Japanese standard type. It was estimated to be 30 feet high and 125 feet long. The raft varies from ours only in that it has a high flared steel bow for towing. The *Asahi* was the towing vessel.

The range was estimated to be 2,500 yards. Only one gun was fired at a time; the string for each gun or each set of pointers was five shots. Time required to fire one string of five shots varied between 50 seconds and 1 minute; time required between strings (or to shift pointers), 30 seconds. About 15 strings were observed and timed. Of these the only two shots that fell short fell about halfway between firing vessel and target. No shots fell close to the target; but the trajectory might have been flat for that range, however; many shots were bad ones, some at least 2,000 yards over.

This vessel passed astern of the firing vessel and target, and after changing course to the westward passed the target about 4,000 yards on the starboard beam. Firing was discontinued some time before the target bore abeam, therefore it was impossible to see how the shots fell as regards deflection.

The *Asahi* and *Ikoma* are gunnery training ships attached to Yokosuka naval station.

TORPEDOES—SPEED OF SHIPS FIRING FROM SUBMERGED TUBES.

Source: Reliable.

(13734.)

24 November, 1920.

The Japanese installed a submerged torpedo tube in a destroyer and conducted experiments to determine the resistance of the spoon. It was stated that on these experiments it required 1,000 horsepower more to make a certain speed with the spoon out than with it housed. But it was not known what this particular speed was. However, as a result of these experiments, it was believed that torpedoes could be fired from submerged tubes at 26 knots.

Further experiments were then conducted on the *Kongo*. The first torpedo was fired at 26 knots, at which speed the spoon was carried away and the torpedo was sunk and lost. The next torpedo was fired at 24 knots. This time the spoon was undamaged, and the torpedo made a satisfactory and successful run. Further experiments proved that torpedoes can be fired from submerged tubes at 24 knots.

Deck tubes are not now installed on any ships larger than the 5,500-ton cruisers, but the new battle cruisers are to be equipped with from one-third to one-half above-water tubes.

TORPEDO FACTORY AT NAGASAKI.

Source: Reliable.

(5974.)

18 November, 1920.

The factory is owned and operated by the Mitsubishi Co., but is under entirely different management from the dockyards at Nagasaki. It is stated that Mitsubishi interests own the plant entirely. It is also said that it is the only private torpedo factory in Japan and that its entire output is contracted for by the Japanese Navy. The output is 500 torpedoes per year, of the standard type now in use by the Japanese Navy. While the yard is under private control and management, a naval officer is constantly in residence to oversee and inspect the work.

MUTSU—THICKNESS OF PROTECTIVE DECK.

Source: Reliable.

(6797.)

24 November, 1920.

The protective deck of the *Mutsu* is reported as of 350-pound plate, approximately 3 inches thick.

SUBMARINES.

GERMAN SUBMARINE PLANS.

Source: Reliable.

(13886.)

3 December, 1920.

This plan is the first installment of submarine plans obtained by the Allied Control Commission. A blue print was made from a pencil tracing, which tracing was done in Germany. The plan shows a design of enlarged German submarine cruisers which apparently did not get beyond the design stage so far as construction is concerned.

The scale of the plan is 1:100. The following approximate data have been taken off the plan:

Length	320 feet.
Maximum beam	29.7 feet.
Normal draft	17.4 feet.
Full draft	20.67 feet.
Surface displacement	2,130 tons.
Frame spacing, inner hull	33 to 34 inches.
Frame spacing, outer hull	20½ inches.
Armament	Three 5.9-inch guns.
	Four bow torpedo tubes.
	Two stern torpedo tubes.

Particular attention is invited to the following features:

(*a*) Antirolling tanks.

(*b*) Bow planes above water—shape similar to those installed on *U-140*.

(*c*) Three 5.9-inch guns.

(*d*) Very pronounced skeg.

Generally speaking, this design follows the large German submarine cruisers of the *U-140* class. This design appears to represent the next step in size of German submarines.

BRITISH SUBMARINES—K CLASS.

Source: Reliable.

(6902.)

1 November, 1920.

Of the 17 submarines of the K class which were completed during the war, the following disposition of these boats may be of interest

in view of their being steam submarines: Three were lost in the war; six are in commission and six are in reserve; two (*K–3* and *K–7*) were put up for sale and have been disposed of.

The German press, in noting that these two boats were put up for sale, made comments with regard to this class, indicating that they were not a successful type. Investigation of the sale of these vessels indicates that it was a question of economy rather than any other reason why *K–3* and *K–7* were sold.

In connection with reducing expenditures, a material survey was made of the K class submarines. It was found that *K–3* and *K–7* would require a relatively large sum to make a proper refit, and in view of the fact that it is the policy of the Admiralty to reduce expenses wherever possible, it was determined that refitting these two vessels was not justified, especially when it was the Admiralty's intention to put at least half of the K class in reserve. A decision was therefore made to dispose of the two vessels of the class which required the greatest expenditure of money to place in first-class condition. The success or the lack of success of this type of British submarine has no particular bearing on the disposition of the boats in question.

DECEMBER 23, 1920.

Dates for completion of vessels.

BATTLESHIPS.

Delaware	Boston	Dec. 31.	Connecticut	Philadelphia	Indefinite.
Utah	do	Do.	Michigan	do	Ready.
Arizona	New York	Do.	South Carolina	do	Do.
Pennsylvania	do	Do.	Nevada	Norfolk	Dec. 31.
Tennessee	do	Indefinite.	Oklahoma	do	Do.

CRUISERS AND GUNBOATS.

Chester (res.)	Boston	Indefinite.	Denver	Mare Island	Jan. 7.
Galveston	do	Do.	Charlotte [1]	Puget Sound	Indefinite.
Rochester	New York	Dec. 31.	Missoula [1]	do	Do.
Columbia	Philadelphia	Do.	Seattle [1]	do	Do.
Sacramento	Charleston(Ap.)	Jan. 22			

[1] To be placed out of commission.

Dates for completion of vessels—Continued.

DESTROYERS AND DESTROYER TENDERS.

Colhoun	Portsmouth	Indefinite.	A. P. Upshur (fit. out)	Norfolk	Indefinite.
Israel (res.)	do	Jan. 20.	Benham (res.)	do	Do.
McKee (res.)	do	Indefinite.	Clemson (res.)	do	Jan. 10.
Ringgold (res.)	do	Feb. 1.	Connor (res.)	do	Indefinite.
Robinson (res.)	do	Indefinite.	Dahlgren	do	Dec. 31.
Stevens	do	Do.	Downes (res.)	do	Indefinite.
Taylor (res.)	do	Jan. 10.	Duncan (res.)	do	Do.
Conyngham (res.)	Boston	Indefinite.	Goldsborough	do	Dec. 31.
Kimberly (res.)	do	Do.	Graham	do	Do.
Luce (res.)	do	Do.	Mason	do	Do.
Maddox (res.)	do	Do.	Parker (res.)	do	Indefinite.
Mahan	do	Dec. 31.	Wm. B. Preston	do	Jan. 4.
Meredith (res.)	do	Indefinite.	Satterlee	do	Dec. 31.
Murray	do	Dec. 31.	Semmes	do	Do.
Abbott	New York	Indefinite.	W. C. Wood (fit. out)	do	Indefinite.
Blackhawk (tender)	do	Dec. 31.	Belknap (res.)	Charleston	Feb. 1.
Childs	do	Do.	Breckenridge	do	Indefinite.
Dickerson	do	Do.	Rodgers	do	Do.
Hatfield	do	Do.	Aulick	Mare Island	Do.
Herbert	do	Do.	Babbitt	do	Do.
Leary	do	Do.	Badger	do	Do.
Preble	do	Do.	Chauncey	do	Do.
Sampson	do	Indefinite.	De Long	do	Do.
Schenck	do	Dec. 31.	Jacob Jones	do	Do.
Sicard	do	Do.	Twiggs	do	Do.
Williamson	do	Indefinite.	Ward	do	Do.
Barney	Philadelphia	Dec. 31.	Zeilin (fit. out)	do	Do.
Bernadou	do	Do.	Edwards (res.)	Puget Sound	Jan. 15.
Blakely	do	Do.	Hogan	do	Indefinite.
Crowninshield	do	Do.	McKenzie	do	Do.
Craven	do	Jan. 4.	Rathburne	do	Dec. 31.
Dixie (tender)	do	Indefinite.	Renshaw	do	Indefinite.
Peary (fit. out)	do	Do.	Roper (res.)	do	Dec. 31.
Pope (fit. out)	do	Do.	Talbot (res.)	do	Do.
Winslow	do	Jan 4.			

SUBMARINES AND SUBMARINE TENDERS.

S-2	Portsmouth	Apr. 1.	T-1	Norfolk	Indefinite.
S-9	do	Mar. 1.	Camden	do	Do.
S-16	do	Indefinite.	R-1, 2, 3, 4, 5, 6, 7, 8, 9, 10.	do	Do.
Savannah	Boston	May 28.			
K-1, 2, 3, 4, 5, 6	Philadelphia	Jan. 31.	Bushnell	do	Do.
K-7, 8	do	Jan. 15.	F-2, 3	Mare Island	Do.
N-4, 5, 6	do	Indefinite.	H-2, 5	do	Do.
S-1	do	Jan. 15.	S-30	do	Do.
Fulton	do	Indefinite.	Alert	do	Do.

FLEET TENDERS (TRAIN).

Rappahannock (res.)	Portsmouth	Indefinite.	Maumee	Charleston	Indefinite.
Culgoa	New York	Feb. 12.	Rail	do	Jan. 4.
Iuka	do	Dec. 31.	Teal	do	Indefinite.
Robin	do	Indefinite.	Widgeon	do	Do.
Carrabassett	Norfolk	Dec. 31.	Comfort (Ord.)	Mare Island	Do.
Contocook	do	Do.	Orion	Puget Sound	Dec. 27.
Lebanon	do	Feb. 12.	Neptune	do	Do.
Prometheus	do	Dec. 27.	Swallow	do	Indefinite.
Proteus	do	Dec. 30.	Vulcan	do	Dec. 27.
Bobolink	Charleston	Jan. 4.			

MINE FORCE.

Auk	Portsmouth	Indefinite.	Quail	Portsmouth	Dec. 31.
Chewink	do	Dec. 31.	San Francisco	do	Do.
Cormorant (res.)	do	Feb. 1.	Woodcock	do	Indefinite.
Curlew	do	Indefinite.	Mallard	Philadelphia	Dec. 31.
Flamingo	do	Do.	Vireo	Charleston	Jan. 4.
Lark	do	Dec. 31.	Oriole	Mare Island	Indefinite.
Osprey	do	Indefinite.	Pigeon	do	Do.

Dates for completion of vessels—Continued.

AIR FORCE.

Langley	Norfolk	Indefinite.			

MISCELLANEOUS.

Patuxent	Portsmouth	Jan. 15.	Hannibal (res.)	Philadelphia (app.)	Jan. 31.
Aramis	New York	Indefinite.			
Nokomis	do	Do.	Water Barge No. 31	Charleston	Feb. 10.
			Potomac	New Orleans	Jan. 15.

N. T. S.

Pyro	New York	Indefinite.	Sapelo	Norfolk	Jan. 6.
Henderson	Philadelphia	Ready.	Saturn	Mare Island	Indefinite.
Caesar	Norfolk	Indefinite.	Houston	Puget Sound	Dec. 31.
Quincy	do	Do.			

EAGLE BOATS.

Eagle No. 13	Portsmouth	Dec. 24.	Eagle No. 59	Portsmouth	Dec. 27.
Eagle No. 19	do	Do.	Eagle No. 39	Key West	Indefinite.
Eagle No. 23	do	Completed	Eagle No. 25	Philadelphia	Do.
Eagle No. 26	do	Jan. 15.	Eagle No. 14	Mare Island	Do.
Eagle No. 44	do	Jan. 8.	Eagle No. 57	Puget Sound	Do.

U. S. SHIPPING BOARD.

Otsego	Portsmouth	Indefinite.	Castletown	Philadelphia	Feb. 1.
Shickshinny	Boston	Do.	Dewey	do	Dec. 18.
Mount Vernon	do	Mar. 15.	Niawa	do	Indefinite.
Agamemnon	New York	Indefinite.			

BATTLESHIPS OUT OF COMMISSION.

Louisiana [1]	Philadelphia.	Missouri [1]	Philadelphia.
Alabama [1]	Do.	Rhode Island [1]	Mare Island.
Illinois [1]	Do.	Vermont [1]	Do.
Kearsarge [2]	Do.	Wisconsin [1]	Philadelphia.
Kentucky [1]	Do.	Nebraska [1]	Mare Island.
New Jersey [1]	Boston.	Georgia [1]	Do.
Virginia [1]	Do.	Oregon [1]	Puget Sound.
Maine [1]	Philadelphia.		

BATTLESHIPS UNDER REDUCED COMMISSION.

Connecticut	Philadelphia.	South Carolina	Philadelphia.
Michigan	Do.		

CRUISERS, GUNBOATS, AND MISCELLANEOUS OUT OF COMMISSION.

Dubuque [3]	Portsmouth.	Nashville [1]	Charleston.
Huntington [1]	Do.	Raleigh [4]	Do.
Isabel	Philadelphia.	Topeka	Do.
Ozark [1]	Do.	Monadnock [4]	Olongapo.
Pueblo [1]	Do.	Castine [4]	New Orleans.
Tonopah [1]	Do.	Bay Ocean [4]	Mare Island.
Yankton [4]	Do.	Machias [4]	Do.
Langley [5]	Norfolk.	Marblehead [4]	Do.
Standish [4]	Do.	Supply [4]	Do.
Wasp [4]	Do.	Yorktown [4]	Do.
Winchester [4]	Do.		

[1] No work being done.
[2] Conversion into crane ship.
[3] General repairs.
[4] To be sold.
[5] To be used for depth charge experiments.

Dates for completion of vessels—Continued.

TORPEDO BOATS OUT OF COMMISSION.

C. T. B. No. 6 (Morris)[1]	Newport.	Hopkins [4]	Philadelphia.
C. T. B. No. 16 (Thornton) [1, 4]	Norfolk.		

EAGLE BOATS IN ORDINARY.

AT PORTSMOUTH.

Eagle No. 1.	Eagle No. 9.	Eagle No. 28.	Eagle No. 45.	Eagle No. 52.
Eagle No. 2.	Eagle No. 10.	Eagle No. 37.	Eagle No. 46.[8]	Eagle No. 55.
Eagle No. 3.	Eagle No. 24.	Eagle No. 41.	Eagle No. 48.	Eagle No. 56.[8]
Eagle No. 5.	Eagle No. 27.	Eagle No. 44.	Eagle No. 50.	

SUBMARINES OUT OF COMMISSION.

U-117 [9]	Philadelphia.	UC-97 [9]	Chicago.
U-140 [9]	Do.	UB-88 [9]	San Pedro.
UB-148 [9]	Do.	U-111 [9]	Portsmouth.
G-1	Do.		

SUBMARINES AND SUBMARINE TENDERS IN RESERVE.

D-1, 2, 3 [10]	New London.	K-1, 2, 3, 4, 5, 6, 7, 8 [11]	Philadelphia.
Eagle No. 33	Do.	E-1, 2	Hampton Roads.
Fulton	Do.	Eagle No. 17	Do.
G-3 [10]	Do.	L-1, 2, 3, 4, 9, 10, 11	Do.
N-1, 2, 3, 4, 5, 6, 7 [10]	Do.	M-1	Do.
Eagle No. 25	Philadelphia.	F-2, 3 [12]	San Pedro.

SUBMARINES IN ORDINARY.

A-3, 5 [1]	Cavite, P. I.	B-3 [1]	Cavite, P. I.

VESSELS TO BE PLACED OUT OF COMMISSION IN NEAR FUTURE.

Elcano [4]	Asiatic Station.	Samar [4]	Asiatic Station.
Pampanga [4]	Do.	Villalobos [4]	Do.
Quiros [4]	Do.		

REDUCED COMMISSION OR ORDINARY.

Rappahannock [3]	Portsmouth.	Hannibal [3]	Philadelphia.
Chester [3]	Boston.	Comfort [3]	Mare Island.
Caesar [3]	Norfolk.		

DESTROYERS OUT OF COMMISSION.

AT PHILADELPHIA.

Ammen.	Henley.	Mayrant.	Perkins.	Walke.
Beale.	Jarvis.	McCall.	Roe.	Warrington.
Burrows.	Cushing.	Monaghan.	Sterrett.	
Drayton.	Jenkins.	Patterson.	Terry.	
Fanning.	Jouett.	Paulding.	Trippe.	

[1] No work being done.
[3] General repairs.
[4] To be sold.
[8] In full commission.
[9] Being dismantled.
[10] Submarine School, experimental and development work.
[11] Under repairs.
[12] Elemental Submarine School work.

Summary by navy yards of ships under repair.

PORTSMOUTH, N. H.	
Colhoun	Indefinite.
Israel (res.)	Jan. 20.
McKee (res.)	Indefinite.
Ringgold (res.)	Feb. 1.
Robinson (res.)	Indefinite.
Stevens	Do.
Taylor (res.)	Jan. 10.
S-2	Apr. 1.
S-9	Mar. 1.
S-16	Indefinite.
Rappahannock (res.)	Do.
Auk (res.)	Do.
Chewink	Dec. 31.
Cormorant (res.)	Feb. 1.
Curlew (res.)	Indefinite.
Flamingo (res.)	Do.
Lark	Dec. 31.
Osprey (res.)	Indefinite.
Quail	Dec. 31.
San Francisco	Do.
Woodcock (res.)	Indefinite.
Patuxent	Jan. 15.
Eagle No. 13	Dec. 24.
Eagle No. 19	Do.
Eagle No. 23	Completed.
Eagle No. 26	Jan. 15.
Eagle No. 44	Jan. 8.
Eagle No. 59	Dec. 27.
Otsego	Indefinite.

BOSTON.	
Delaware	Dec. 31.
Utah	Do.
Chester (res.)	Indefinite.
Galveston	Do.
Conyngham (res.)	Do.
Kimberly (res.)	Do.
Luce (res.)	Do.
Maddox (res.)	Do.
Mahan	Dec. 31.
Meredith (res.)	Indefinite.
Murray	Dec. 31.
Savannah	May 28.
Mount Vernon	Mar. 15.
Shickshinny	Indefinite.

NEW YORK.	
Arizona	Dec. 31.
Pennsylvania	Do.
Tennessee	Indefinite.
Rochester	Dec. 31.
Abbott	Indefinite.
Blackhawk (tender)	Dec. 31.
Childs	Indefinite.
Dickerson	Dec. 31.
Hatfield	Do.
Herbert	Do.
Leary	Do.
Preble	Do.
Sampson	Indefinite.
Schenck	Dec. 31.
Sicard	Do.
Williamson	Indefinite.
Culgoa	Feb. 12.
Iuka	Dec. 31.
Robin	Indefinite.
Aramis	Do.
Nokomis	Do.
Pyro	Do.
Agamemnon	Do.

PHILADELPHIA.	
Connecticut	Do.
Michigan	Ready.
South Carolina	Do.
Columbia	Dec. 31.
Barney	Do.
Bernadou	Do.
Blakely	Do.
Crowninshield	Do.
Craven	Jan. 4.
Dixie (tender)	Indefinite.
Peary (fit. out)	Do.
Pope (fit. out)	Do.
Winslow	Jan. 4.
K-1, 2, 3, 4, 5, 6	Jan. 31.
K-7, 8	Jan. 15.
N-4, 5, 6	Indefinite.
S-1	Jan. 15.
Fulton	Indefinite.
Mallard	Dec. 31.
Hannibal (res.)	Jan. 31.
Henderson	Ready.
Eagle No. 25	Indefinite.
Castletown	Feb. 1.
Dewey	Dec. 18.
Niawa	Indefinite.

NORFOLK.	
Nevada	Dec. 31.
Oklahoma	Do.
A. P. Upshur (fit. out)	Indefinite.
Benham (res.)	Do.
Clemson (res.)	Jan. 10.
Connor (res.)	Indefinite.
Dahlgren	Dec. 31.
Downes (res.)	Indefinite.
Duncan (res.)	Do.
Goldsborough	Dec. 31.
Graham	Do.
Mason	Do.
Parker (res.)	Indefinite.
Wm. B. Preston	Jan. 4.
Satterlee	Dec. 31.
Semmes	Do.
W. C. Wood (fit. out)	Indefinite.
T-1	Do.
Camden	Do.
R-1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Do.
Bushnell	Do.
Carrabassett	Dec. 31.
Contocook	Do.
Lebanon	Feb. 12.
Prometheus	Dec. 27.
Proteus	Dec. 30.
Langley	Indefinite.
Caesar	Do.
Quincy	Do.
Sapelo	Jan. 6.

CHARLESTON.	
Sacramento (about)	Jan. 22.
Belknap (res.)	Feb. 1.
Breckenridge	Indefinite.
Rodgers	Do.
Bobolink	Jan. 4.
Maumee	Indefinite.
Rail	Jan. 4.
Teal	Indefinite.
Widgeon (res.)	Do.
Vireo	Jan. 4.
Water barge No. 31	Feb. 10.

Summary by navy yards of ships under repair—Continued.

KEY WEST.	
Eagle No. 39	Indefinite.
NEW ORLEANS.	
Potomac	Jan. 15.
MARE ISLAND.	
Denver	Jan. 7.
Aulick	Indefinite.
Babbitt	Do.
Badger	Do.
Chauncey	Do.
De Long	Do.
Jacob Jones	Do.
Twiggs	Do.
Ward	Do.
Zeilin (fit. out)	Do.
Alert	Do.
F-2, 3	Do.
H-2, 5	Do.
S-30	Do.
Comfort (Ord.)	Do.
Oriole	Do.
MARE ISLAND—continued.	
Pigeon	Do.
Saturn	Do.
Eagle No. 14	Do.
PUGET SOUND.	
Missoula	Do.
Charlotte	Do.
Seattle	Do.
Edwards (res.)	Jan. 15.
Hogan	Indefinite.
McKenzie	Do.
Rathburne	Dec. 31.
Renshaw	———.
Roper (res.)	Dec. 31.
Talbot (res.)	Do.
Orion	Dec. 27.
Neptune	Do.
Swallow	Indefinite.
Vulcan	Dec. 27.
Houston	Dec. 31.
Eagle No. 57	Indefinite.

OFFICE OF NAVAL INTELLIGENCE.
NAVY DEPARTMENT.
Washington, D. C.

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FOR CONVENIENCE IN ROUTING.

Officer.	Initials.	Date received.	Date forwarded.
Captain			
Executive Officer			
First Lieutenant			
Navigating Officer			
Gunnery Officer			
Communication Officer			
Engineer Officer			
Medical Officer			
Supply Officer			
First Division Officer			
Second Division Officer			
Third Division Officer			
Fourth Division Officer			
Fifth Division Officer			
Marine Officer			

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MISCELLANEOUS.

THE NAVAL WAR 1914–1918, NORTH SEA. (FROM THE GERMAN NAVAL STAFF HISTORY.)

(Continued.)

The first installment of this translation appeared in the Monthly Information Bulletin of 15 January, 1921.

(A free translation.)

In this the expectation of a lasting neutral attitude on the part of England was refuted. In fact from the beginning, in spite of all the reasons advanced in its favor, such an attitude was very improbable. To arrive at this conclusion one would only need to recall England's political engagements made in 1911 by British statesmen in regard to the Dual Alliance. At that time, Lord Haldane in conversation with the German military attaché, Maj. Ostertag, had clearly stated that it was self-evident that England must support France in case Germany should declare war on the latter.[1] He then added that the engagement arising from the Entente, corresponding to the self-preservation instinct of England's prescribed policy, would permit no power in Europe to become strong enough to crowd England out and that only in this way could it insure that its command of the sea would continue indefinitely. Now to be sure the word of the King of England was thrown into the scale, to prove to the doubters of English neutrality the lack of weight of their convictions.

The worst consequence that could have resulted from the political uncertainty of England's attitude was averted by the order for the

[1] Compare the following taken from the statement of Lord Haldane as printed in the "Times" of 16 December, 1918: "In a war with Germany in which we stood alone our safety from attack from the viewpoint of the Committee on National Defense was entirely sufficient. The committee reached the conclusion after mature consideration and after it had examined the special points that were personally presented in much detail by Lord Roberts and his advisers. There was, however, the inconsistent circumstance that in case France, instead of remaining aloof, should be attacked at the same time, our position might be less favorable. For if a successful invasion should convert the French channel ports into fleet bases then Germany through U-boats and long-range guns could threaten the control of our fleet over the channel and also our island isolation. There was only one way to afford protection against this danger. If we have a large fleet, then France must have a large army. This army would not be quite sufficient to protect the entire eastern boundary of France against the still greater German Army. However, careful calcuations made by the French General Staff and our own showed that the addition of a comparatively small but well trained and organized expeditionary army from England, to take part in the defense of the northern portion of the French boundary, combined with the French Army, would be sufficient, especially if one took into account the certain cooperation of the Russian Army by holding the German Army in the east."

return home. The time for coaling was reduced to the absolutely essential, the fleet left the Norwegian ports and on 27 July at 7 p. m. was assembled at 59° 0′ North Latitude and 4° 20′ East Longitude off Skudesmes, distant about 30 nautical miles from Stavanger. After assembly the fleet commander had the division commanders[2] come on board the flagship of the fleet and informed them of the reasons which had led to the sudden departure from Norwegian waters without, however, stating that war was imminent. Consequently no preparations for battle of any kind were made but the fleet proceeded at the usual speed and with the precautions customary in maneuvers. The order was merely given to be on the lookout for chance meetings with French vessels in the North Sea. A meeting was not improbable, as at this time the President of the French Republic, returning from Russia, was expected in the Skagerrak. In fact the fleet did sight several French destroyers. Otherwise the vessels of the High Seas Fleet reached their home ports with no untoward incidents and without taking up the positions prescribed in the event of war. This fact should be noted.

Hastening to join the fleet, His Majesty the Kaiser arrived at Kiel on the morning of the 27 of July on his yacht, and on arrival ordered the station commander, Admiral Bachmann, to guard all the sea routes to the Kiel. He considered it as not unlikely that the Russians, who must have been informed of the stay and cruise of our fleet, and like the Japanese in 1904, on that night in February before Port Arthur, might open hostilities by a destroyer attack on our fleet.

The safety order issued at the station accordingly prescribed a sharp lookout on Kiel Bay; hence it was guarded on the east as far as the east entrance of the Fehmarn Belt.

When the entrance of the fleet units on 28 July into Kiel had been safely accomplished, an inconspicuous lookout was substituted that unnecessary alarm of the population might be avoided.

On the evening of the following day the following telegram reached the Admiralty staff from the naval attaché in London:

> According to newspaper reports the First Fleet has gone out; destination so far unknown. Second and Third Fleets, base ports. Eighth Flotilla and convoy vessel *Bonaventure* with Third U-boat Flotilla, Humber; Fourth U-boat Flotilla and Sixth Flotilla, together with several aeroplanes, Dover. Admiralty again publishes the location of vessels, but incompletely. Mobilization preparations continue.

Therefore the statement of the English Foreign Office in the report of 28 July contradicted the facts. The English Fleet did not stay in Portland, but apparently, soon after the return of the German ships to the home ports, left theirs and began to deploy.

---

[2] Chiefs of squadrons and commanders of the secondary vessels.

How far there was a causal connection here must be left undecided, especially in view of the statement made in the history of the "Dover Patrol" by Admiral Bacon, that the "Grand Fleet" on its way to Scapa Flow must have passed through the Dover-Calais Straits during the night of August 1. If one considers that the return of the German Fleet was responsible for the British mobilization preparations then it must be admitted that the containing of the German Fleet in home waters would in the first place have rendered less acute the political situation and also would have better coincided with the military requirements of the situation than the hazardous and uncompleted itinerary of the fleet to Norwegian ports. The political requirement that no measures be taken that might render the situation more acute was certainly muddled by the German military authorities. On the contrary, England by a trial mobilization and subsequent measures regardless of the tension secured far-reaching military advantages. It is now certain beyond a doubt that the British Admiralty did not content itself with certain military precautionary measures justified by the then highly strained political situation, but in particular from the 28th of July intended to gain and maintain the military advantage if it came to blows while on the part of Germany this could neither be gained nor parried. To gain this there was no one in England who hesitated from using any political measures even though they might prove offensive. It was merely the culmination of a series of developments begun over a decade before. As far back as 1904 a withdrawal of the English battleships in foreign waters to those of the home country was begun. The center of activity of the English naval forces was then gradually shifted from the Mediterranean to the Atlantic Ocean, to the Channel, and to the North Sea.

In 1904 the Mediterranean contained the strongest force. In 1907 the main part of the fleet was stationed in the Channel at the same time North Sea units of the newest types began to make their appearance, and the reserve units were at this time doubled. In 1909 the consolidation of the English naval forces against Germany was finally accomplished and this *before* the formation of a German fleet was generally considered. Meanwhile the center of activity of British ship construction was gradually and openly shifted to the eastern coast of the island kingdom. In 1908 the construction of the immense naval base at Rosythe was commenced and the bases at Harwich, at the mouth of the Humber, and also at Dundee and at Invergordon were completed. At the same time Scapa Flow was considered as a future naval base.

Further, the English fleet maneuvers during the year before the war were based exclusively on Germany as an opponent. In the

fleet maneuvers of the year 1909 during the periods of "strained relations" and "war imminent" the policy of the English military party was such that it directly challenged an outbreak of hostilities. In the maneuvers of 1909, 1910, and 1911, there was also attempted the blockade of a region which undoubtedly was intended to represent the German Bight. The transportation of the English expeditionary force to France and Belgian ports, under the protection of the navy, was thoroughly planned. In all discussions concerning these measures whether under the cognizance of the English Admiralty or the English Ministry of War there prevailed a taciturn agreement that this expeditionary force was to be employed against Germany.

How greatly England utilized all its resources, the fleet as well as the expeditionary army, toward the political effacement of Germany and thereby spurring on the latter has recently been disclosed by the English statesman and former minister of war, Lord Haldane, in the "Times" of 16 December, 1918. Haldane considered the danger of surrounding Germany so great that the increasing of the British Army during the period 1906–1914 would have been the straw that broke the camel's back and would have forced Germany to a preventive war.[3]

Reviewing these facts and the events narrated therein, one must accordingly agree with the well-known English naval writer, Archibald Hurd, when he stated in the "Daily Telegraph" of 27 January, 1919, that the process of consolidating all forces for the war which has just come to an end required the best part of 10 years and was carried out step by step but was not quite complete when the war broke out. * * *

Under such circumstances the estimate of the political situation by the responsible German statesmen at the beginning of the period of strained relations must have been doubly surprising to the Admiralty.

For purely military reasons from 1906 to 1914 it was out of the question to risk such an attempt. The English General Staff unwillingly but of necessity was dissuaded from carrying out this plan during the transition period, as Germany would have been able to justify an attack on the ground that preparations were being made to surround her. If at the beginning of the period of strained relations the neutrality of England was still considered as definite by the political leaders, his calculation was in complete contradiction to the opinion of the general world situation previously held by the Admiralty staff.

The maneuvers of the navy before the war considered England as the chief opponent. All direct operations were based on a war

[3] Haldane stated there that an editorial in the "Times" of December 13 had given as its conviction that it would have been better if England had had a larger army of about one million men ready.

of aggression by England in which however Germany was to play a defensive part. But as a result of the changed view of the situation held by the Imperial Chancellor and the Foreign Office the operations preliminary to war on the sea were reconstructed on the basis that only a war against Russia and France was to be expected while the attitude of England was merely to be regarded as uncertain. It was necessary to follow the policy during these necessary preparations for war that nothing should be done that would disturb England and force her to the side of our opponents. However, assuming that England might remain neutral the preliminary work of operation carried out by the Admiralty staff showed that even in a naval war directed exclusively against Russia and France the North Sea and the West must be considered the main theater of such a war. "The major part of the fleet must perform its main mission, that of maintaining our overseas importation. Free commerce on the sea, and, if possible under the German flag, was indispensable if our economic life was to be strengthened against strangulation on land. In comparison with the predominating importance of the western theater of war in this case even that of the east must recede in importance." These were the reasons that were brought forward by the Admiralty staff for their stand. The consideration of the uncertain but probably hostile attitude of England was of still greater weight in providing primarily for a deployment of all the high sea forces in the North Sea. Still, even lines of thought at variance with this were at times considered. For instance the chief of the Admiralty staff stated personally on 25 July as follows on this question:

If England remains neutral then in spite of the very important tasks in the North Sea I am in favor of first cleaning up Russia, and for this purpose, using only such forces, especially light ones, as are necessary. With the rest and the vessels left free in the Baltic the tasks in the North Sea can then be carried out.

Against special favoring of the western theater of war we have the following reasons:

1. Everything must be avoided that might irritate England and cause her to take sides against us.
2. A manifest success can only be obtained in the Baltic.
3. Too weak forces in the Baltic might lead to failure.

These thoughts had already been stated in similar form by Admiral von Pohl without however urging that they be put into practice; they were not shared by other naval officers.

In the proposed deployment in the North Sea there were available for the important tasks of protecting the German Baltic coast and German commerce in the Baltic against the activities of the Russian Fleet naval forces of the older types, these were however hardly sufficient; but the Kaiser Wilhelm Canal permitted the rapid shifting of additional naval forces to the Baltic. Large battleships had not as yet passed through the widened canal, as was the wish of the

Imperial Office of Interior Affairs (Reichsamt des Innern) to which the canal authorities were subordinate. Such a passage had been planned for August [4] and there was no doubt that such a passage would be successful, but to make certain however the Admiralty staff at the instigation of the Baltic station ordered a trial passage of the battleship *Kaiserin* to be undertaken on 25 July. This dreadnaught was detached from its division before the fleet went to Norway. The vessel was partially lightened by the removal of coal and the passage was carried out although with some difficulties. Under these circumstances it was doubtless a risk to send the vessels of the Third Squadron from Norway not to Wilhelmshaven but to Kiel. Admiral von Ingernolil recognized this at the time of the report to the Kaiser and tried to prevent it. * * *

Meanwhile between the 27th and 30th of July various reports were received that Russia particularly was making great preparations for mobilization, was recalling those on leave, was calling in reservists, and there was much evidence that she was shifting troops to the boundary. The situation at this time as far as it concerned the navy may be estimated by the following telegram from the Admiralty staff to the fleet on 29 July:

Situation quite serious. Russia making separate preparations, primarily against Austria-Hungary, and safety measures on the German boundary and coast, for example, laying a mine blockade at Riga and extinguishing the lighthouses of Riga and Helsingfors. England waiting some precautionary measures. First fleet probably still at Portland. Second and Third Fleets home ports. Second Fleet fully manned. France not yet desirous of war, safety measures at boundary.

This view was further substantiated by a report from London on the 30th that the location of the First Fleet was unknown and that caution was urgently requested. Somewhat later there was received a supplementary report that the First Fleet was probably in the North Sea en route for the east coast of Scotland,[5] that vessels in reserve had been hastily equipped, French naval officers had been detailed to English vessels and vice versa. At the same time there came a reliable report from Holland that between Terschelling and the Scheld English warships were patroling. At noon the fleet and station commands received the following telegram from the Admiralty staff:

Strained relations have arisen between the Triple Alliance and Great Britain, France, and Russia.

At the same time the "safety" order was issued by His Majesty which provided for such urgent but inconspicuous measures as were required by the present uncertain situation. Thereupon all merchant

[4] As late as the middle of July the canal as a result of the bottom rising was for a time unnavigable for large vessels, but this was being attended to on the urgent request of the naval authorities for hasty repairs.

[5] A statement on page which stated that the "Grand Fleet" is reported to have gone on 1 August to Scapa Flow.

vessels were warned, forces from the High Sea Fleet were dispatched to strengthen the defense of Kiel Bay and also in the North Sea systematic measures which will be discussed later were initiated.

In the evening came the following telegram from the German ambassador in London:

Sir Edward Grey has just informed me that the British Fleet is proceeding northward along the east coast to Scottish ports. The phrase "strained relations" which coming from the Foreign Office would precede any mobilization has not as yet been given. As long as we do not mobilize neither will the French nor the British. Cambon has stated that the French would do no more than we and that merely certain precautionary measures would be taken.[6]

This was offset by the fact that reliable reports had been received the day before stating that the French had shifted about 80,000 men to the eastern boundary and that the French Navy in the Mediterranean was making extensive preparations for mobilization. In Russia the mobilization was at this time already in full swing, although the official mobilization order was dated the evening of the 30th and 31st of July set as the first mobilization day.

Directly after the above-mentioned telegram from London there came the report quoting the following statement of Grey:

The movements of the fleet are entirely free of any offensive character and the fleet will not approach German waters.

Actually, however, with the removal of the British Fleet to Scottish ports its strategical deployment was carried out. A report of the German naval attaché in London on the same day stated that the mobilization work of the English Fleet was completed. The Admiralty prohibited the sale of coal by private concerns. The coast guards were placed on active duty, and to some extent the reservists had likewise been called to the colors. The yards were running night and day, the Second Fleet was assembled off the east coast. All locations of ships and ship movements were kept secret. The German countermeasures for the delaying of which nobody would assume the responsibility became therefore a military necessity. On 31 July the fleet flagship with the Third Squadron in addition to the S. M. S. *Hamburg* and the First U-boat Flotilla commenced the trip to the North Sea through the Kaiser Wilhelm Canal. The passage was accomplished, however, only by curtailing the radius of action of the dreadnoughts through the removal of coal in order to diminish the draft. No other difficulties worth mentioning arose. By the order of the Kaiser there went into effect on the same day the war organization and regulations for the event of war. The details with reference to the changes that took place during the first days of the

[6] In the days that proceeded this statement of Sir Edward Grey, however, preparations were made by the English Navy at all foreign stations, particularly in Eastern Asia, which were equivalent to mobilization. These preparations were of course not known in Germany and mention of them will be found in the description of the war performances of our foreign cruisers.

war may be seen in Table 1, with which is compared a survey of the English forces and the extent of their readiness as shown in Table 2.

In the future reference will only be made to the forces employed in the theater of war in the North Sea. Firstly, however, it must be made clear that the promulgation of the war organization order did not necessarily signify that the forces called out other than those actually on active duty during peace time, were in reality ready for war, as it was first of all necessary, on the declaration of the mobilization order, to bring the crews up to strength by newly trained recruits. As far as the readiness for war of these ships was concerned, aside from the question of material which naturally was in different stages of completion, considerable time was necessary in training the crews and assigning them to their several billets.

Hence for example, on 5 August, the day after the declaration of war with England, only the First and Second Battleships Squadrons were fully prepared for action, to be sure the *Grosser Kurfürst* of the Third Squadron was in commission but would be ready for sea only after a week of performance trials. The *König* assigned to this squadron was placed on active duty on 10 August. The reserve divisions, the Fourth and Fifth Squadrons, still lacked being ready for action, though two ships of the Fourth Squadrons were ready on 5 August and two more were ready from a material standpoint on 15–17 August. The date for placing in commission the vessels of the Fifth Squadron was fixed at 6 to 8 August, even though they would not then be ready for action. Both squadrons during the war made no appearance in the North Sea, but were in general employed in the Baltic theater of war.

Of the battle cruisers the *Derfflinger* was to be placed on active duty during the early part of September and of the small cruisers the *Grandenz* would not be ready until 10 August, while of the old armored cruisers only the *Roon* was ready on 6 August. The *Yorck* and *Prinz Heinrich*, however, could not be placed on active duty until 22 August.[7]

Of the torpedoboat flotillas the Fifth Flotilla would not be ready until 6 August and of the small cruisers the *Berlin* would not be ready for active duty until 30 August. Of the mine-sweeping divisions the Third could not be counted on until 8 August. Likewise only a part of the U-boats were fully ready for sea at the beginning of the war. As for the U-boats, the *U-10*, *U-11*, *U-12*, and *U-26* could not be ready before the middle or end of August. Furthermore it was found necessary to send the third U-boat half flotilla for two or three weeks to Kiel for completion of their overhaul.

[7] The vessels were in various stages of preparation in peace time due to the amount of work at the yards and the funds granted by the Reichstag.

These statements will suffice to show the degree of preparedness of the forces provided for the North Sea theater of war and the disadvantages of mobilization delayed for political reasons. It must, however, be especially emphasized that the mobilization throughout went as planned and that all authorities, especially those of the imperial yards, worked in a very efficient manner.

Returning to the events of 31 July. From noon of this day on it had to be assumed by the Admiralty Staff that England might suddenly throw off her veil of aloofness; therefore at 1 p. m. the order was given to the fleet:

Hasten as much as possible the deployment of all forces in the North Sea against England.

Thereupon during the afternoon the Second Squadron passed from Kiel through the canal to the North Sea. The enthusiasm on all ships, the men and crews of which saw in this order "at the enemy," is impossible of description. All the higher officials were informed that war was imminent. For this reason "measures for war imminent" were ordered. These measures were intended to prepare everything inside the navy necessary for the defense and safety of our country against operations of the enemy. However, any semblance of war is if possible to be avoided in so doing. The commander of the First Squadron already in the North Sea was given orders to protect the German Bight.

The fleet flagships, still in the canal, on 31 July at 5 p. m. received this radiogram from the Admiralty Staff:

War threatens Great Britain, France, Russia. Allies, Austria-Hungary, probably Italy.

On 1 August at 6 a. m. the ships went from Kiel to Wilhelmshaven and began final preparations for war. On this day it was learned from England that the steamer connection between Hook van Holland and Harwich had been stopped in order to better hide the measures of the British Admiralty. It was learned that the English mining companies were refusing to deliver coal to Westphalian firms and that the shipowners were not assuming any additional insurance. The British Admiralty had a survey made of all transport vessels. Further, the German consul reported from Stavanger that four or five larger British warships had passed the Jaederen coast (entrance to the Skaggerak) in a northerly direction.

The German Fleet command now saw itself confronted by the difficult task of taking all military precautions during the further continuance of the period of "strained relations" that would forestall any surprises but at the same time would not detract from the political attempts toward an understanding which were in progress

to the last hour. The commander in chief of the fleet accordingly received from the Admiralty on 1 August the orders:

It can not be too strongly emphasized that every suspicious ship movement that might lead to an unintentional outbreak of hostilities with England should under all circumstances be avoided.

Immediately afterwards came the telegram:

Mobilization ordered. First mobilization day 2 August.

From a report of the naval attaché in London negotiations were still pending concerning the neutrality of England and her allies in the event of war between Germany and Russia. The political leaders went so far in this endeavor that at the order of the imperial chancellor the German ambassador in London as late as the afternoon of 3 August pledged to Sir Edward Grey that if England would remain neutral the German Fleet would neither approach the English Channel nor the northern coast of France. This far-going assurance was the result of a conversation between the English minister and the French ambassador on the evening of 2 August in London in which Grey had suggested such a pledge on the part of Germany but had actually qualified it as "far too small a basis for negotiations."

Meanwhile Russia opened hostilities on 2 August. The Baltic Sea forces therefore received from the Admiralty Staff the order to "proceed according to plan." A state of war existed with Russia. At the same time a report of the Wolff Telegraph Bureau coming from England stated that the Admiralty had issued sealed orders to all warships and had placed an embargo on all radio stations. Towards noon on 2 August all telegraph lines to England, including those across Holland and Belgium, were suddenly cut off by the English, a circumstance which coupled with a report from the Foreign Office gave cause to fear an English expedition against the German Bight during the following night. At the same time several reports came to the effect that the Holland-Belgium coast, particularly the Scheld, was constantly guarded by strong English forces.[8] Although further on 3 August the outbreak of hostilities with France on land was expected which in the opinion of the Admiralty Staff must irrevocably be followed by the hostile interference of England. Still every unfriendly measure against England must be avoided so long as the English decision was still outstanding. Urgent and often repeated inquiries

[8] In regard to the events which actually took place on this day in the English Channel we learn from the "Times" History of the War, volume 12, page 42, the following:

"On 2 August, 1914, at 8 a. m., the French Rear Admiral Rouyer was given orders to protect Dover Straits against German attacks with six old armored cruisers and twelve torpedoboats. What could the admiral have done if the whole German Fleet had gone out against him? But that was not to be. On the morning of 3 August British destroyers informed the French flotilla of the joyful news that the Grand Fleet was ready to interfere if the German Fleet should proceed against the French. On 2 August the British Cabinet gave assurance to France that if the German Fleet should enter the Channel or the North Sea to undertake operations against shipping on the French coast the British Fleet would give the French forces all assistance in their power."

from the fleet at this time as to whether the auxiliary cruisers ready for a war on commerce in European waters might at least put out to sea were for this reason answered in the negative by the Admiralty Staff. In so doing the going out of these auxiliary cruisers could in no way be regarded as a hostile act so long as their recall was possible and the order for opening hostilities had not yet been given. On the other hand, every day of delay jeopardized the possibility of the auxiliary cruisers doing this safely. Those in charge of the naval war therefore gave up considerable military advantages in favor of a policy that would bring an understanding.

Even when at 6 p. m. a state of war with France existed and a declaration of war by England was regarded as imminent, at the wish of the Foreign Office ship movements to the west continued to be avoided, for a neutral attitude on the part of England was still considered as possible by German policy and was striven for with might and main. Not until 4th August at 7.30 p. m., after the beginning of a state of war with England, could offensive actions of the High Sea Fleet against England be started.

Thus political circumstances made the rôle assumed by the fleet primarily a defensive one, and the transition from a state of peace to that of war was made difficult by the uncertainty of that situation, as may readily be seen from the following:

When on 30 July "caution" was emphasized, only the question of protecting commerce in the German Bight was discussed. With the increasing seriousness of the situation a surprise attack of hostile forces, particularly of U-boats, torpedoboats, and mine layers was to be expected. As long as the commander-in-chief of the fleet remained in the Baltic, the preparations of these measures fell to the senior commander present, the chief of the First Squadron, Vice Admiral Wilhelm von Laus, and the Wilhelmshaven station commander, Vice Admiral Günther von Krosigk. At midnight on his order the small cruisers *Mainz* and *Stralsund*, together with the Seventh Torpedoboat Flotilla, went out and occupied the line Wangeroog-Helgoland-Eider in such a way that it was guarded at night by torpedoboats, by day with cruisers. While the torpedoboats rested at Helgoland in the daytime the cruisers took station at night outside the mine fields located at the river mouths. From the afternoon of 31 July on the supporting vessel was the battle cruiser *Von der Tann*. The third admiral of the scouting vessels, Rear Admiral Tapken, on board this vessel, at that time assumed charge of the safety measures.

The next day with the preparations for getting underway of the Fourth Torpedoboat Flotilla the task of holding this line against hostile U-boats during daylight was also taken over by the torpedo-

boats, so that the cruisers could be free to perform scout duty. The *Kolberg* also joined these vessels at this time. The first scouting operation of this force, supported by the *Von der Tann*, took place on the afternoon of 31 July and embraced almost the length of the island of Juist. On this trip it was ascertained that steamer schedules had not been interrupted. Some English steamers, mostly in ballast, among them the S. S. *Nicoya* from Glasgow, which ship was equipped with a wireless outfit, approached the Weser and Elbe without being molested by the cruisers, as the meeting occurred outside the territorial waters. Otherwise nothing suspicious was observed. At 8 p. m. the *Von der Tann* anchored with the other battle cruisers, the *Seydlitz* and the *Moltke*, in Schillig roadstead.

Meanwhile the *Hamburg* with the First U-boat Flotilla, consisting of *U–5*, *U–7* to *U–10*, *U–15* to *U–18*, arrived off Helgoland the next afternoon and were placed on patrol duty with the torpedoboats.

Concerning reports of the enemy's conduct as of the afternoon of 30 July, one from the admiralty staff in so far as the theater of war in the North Sea was concerned gave the following information:

"According to a private report of Sir Edward Grey to the ambassador in London, England can not remain inactive in the event of war between Germany and France.

"Mobilization preparations continue. According to newspaper reports the First Fleet on the morning of 29 July left Portland for an unknown destination, location of the destroyer flotilla unknown."

"Second and Third Fleets base ports. Patrol destroyers and U-boat flotillas, former after filling complements, distributed along east coast. They are at the following ports:

"Dover: Sixth Destroyer and Fourth U-boat Flotilla, including several aeroplanes.

"Harwich: Ninth Destroyer Flotilla, Fifth and Sixth U-boat Flotillas.

"Humber: Eighth Destroyer Flotilla and Third U-boat Flotilla.

Dundee: Seventh U-boat Flotilla.

The Seventh Flotilla is said to be en route for the Firth of Forth.

Admiralty is making surveys of all transport vessels.

At Zeebrugge predarations for a landing of the English appear to have been started.

A further report of 31 July stated that the First Fleet had gone northward into the North Sea, probably toward the east coast of Scotland.

At the request of the First Squadron the supreme command for the safeguarding of the German Bight was now taken over by the commander of the scout force on the *Seydlitz*, Rear Admiral Hipper. The radio order issued by him on 1 August for this safeguarding is as follows:

1. From daybreak to darkness a U-boat line running Wangeroog-Helgoland-Amrum. At night the U-boats will put into Helgoland Harbor.

2. A torpedo-boat flotilla (Seventh), which in the evening at 8 o'clock will be relieved by another (Fourth), will steam back and forth along the outpost line Spiekeroog-Helgoland-Narrow Shoal (Schmal Tief).

3. Three small cruisers (*Stralsund*, *Mainz*, and *Kolberg*) will advance in the forenoon along radial courses for about 50 nautical miles from Helgoland.
4. Battle cruisers in the inner German Bight.

In these orders also the uncertainty of the political situation was considered a serious obstacle. In the war diary of the chief of the First U-boat Flotilla, Lieut. Commander Hermann Bauer, there appears the following:

A great deal of care must be exercised in drawing up operation orders for U-boats. For observation and reporting the U-boat is quite unsuited. Before it has been seen and before transmitting information it must make preparations for diving, less the information reported become valueless. For U-boats therefore to clear for action in ostensibly a period of peace in the presence of a possible enemy is a rather difficult task. Therefore the query, should U-boats observe when diving or should they attack on the approach of French or Russian vessels, the decision rendered was to attack only in the case of undoubted hostile actions.

The safety order of the commander of the scout vessels provided furthermore for the advance of small cruisers and the stationing of the battle cruisers in the German Bight. They therefore anchored during the forenoon of 1 August ready for departure outside the bar in the outer Jade. There was an exception made to the permission to go out, however:

As war has not yet been declared, it seems justifiable to permit the small cruisers to advance about 50 nautical miles from Helgoland. The battle cruisers should pass the bar in the forenoon. Further deployment of them will depend on future developments.

Naturally the question arises: How did matters stand up to this time in regard to the preparedness of the main fighting forces, and what activities were allotted to them? On 30 July the dreadnaughts were in Wilhelmshaven discharging superfluous material, boats and target practice ammunition, in the event of war, and taking inventories. At the same time the supply of munition and the mobilization quota of men were taken on board; in the latter case it was chiefly a question of increasing the number of coal passers in order to secure the maximum engine output in the event of military requirements. It was expressly ordered that for the time being steam should not be gotten up. At midnight of 30 July the battle cruisers *Seydlitz* and *Moltke* received orders to remain in readiness to pass out through the locks upon half hour's notice. This was done that the fleet command might at any time order an immediate departure of the battle cruisers. This order was limited somewhat, however, by the fact that it would be impossible for the battle cruisers because of their draft to pass through the locks for a period of about four hours at low water. And again the bar of the outer Jade was not passable at low water. Consequently all dreadnaughts were ordered to proceed through the locks during the afternoon of 31 July. The ships of the First Squadron anchored in Wilhelmshaven roadstead,

the battle cruisers in Schillig roadstead. After anchoring, lights were screened by all ships, nets were installed, and war watches begun, the engines being kept in readiness for getting underway in 45 minutes. The vessels were kept cleared for action.

Concerning the preparedness at the roadsteads in the first days of the war, day order No. 1 of the Third Squadron gives a detailed and in general striking picture. (See Appendix No. 1).

When the commander-in-chief of the fleet arrived at Wilhelmshaven the latter withdrew the battle cruisers from the outer Jade to Wilhelmshaven roadstead.

If, however, an English attack before or simultaneously with the declaration of war was expected, then this measure of sending out valuable light fighting forces without an adequate support of capital ships is not easily understandable from a military standpoint. If an attack came at that time, then the light fighting forces could only find support within range of the Helgoland guns and this, too, only in clear weather. Cruisers and torpedo boats because of inferior speed must fall a victim to the enemy without the possibility of a German counterthrust. It is, however, a fundamental principle in the conduct of a war to utilize all means of making a success out of the first meeting with the enemy for one's own arms.

From 3 August on there was a patrol service of dreadnaughts provided, in that from time to time a vessel of the First or Third Squadrons or a battle cruiser in full readiness for action was to anchor in Schillig roadstead. Indeed the anchorage was so chosen in the apprehension of U-boat and torpedoboat attacks that the vessel at low water would still be quite clear of the bottom. However, this measure was also intended for the defense of the Jade against torpedoboat attacks, for the support of our own forces at sea, the presence of a single dreadnaught made no difference.

The measures above mentioned were correct and sufficient, as at night a support of the light forces at sea by dreadnaughts was not possible. This would only have led to a useless exposure of valuable ships. On the other hand by day, particularly just before and after morning and evening twilight at least some of the dreadnaughts should have been kept in readiness for sea or in the outer river mouths for immediate use, as was first intended by the commander of the scout vessels, during the first critical days when the behavior of the opponent was still quite uncertain. This was prevented by the danger of U-boat attacks, on which, in the last analysis, all the military deductions should be based, hence all small cruisers were withdrawn somewhat from the patrol line and moved closer to the bases. Again after the declaration of war there was for a considerable period a similar lack of proportion between the employment of the light fighting forces and the preparedness of the dreadnaughts as a

result perhaps of insufficient military experience, but probably from the plan of operations [9] which as a result of the political situation forbade on the part of Germany a war of aggression, but a strategical defensive and thus preventing the early entrance of the fleet. All the more *an attack by the enemy* was expected and this expectation governed the spirit of the crews. To anyone who experienced it the picture can never be forgotten of the outgoing battle cruisers, and ships of the First Squadron, the decks cleared for action, the officers on the bridge, the men on deck, while the rousing singing of patriotic songs and the cheers of the crews mingled with those of the population on shore filled the harbor. Brightly burned then the flames of death-defying enthusiasm. In the fleet no one considered at that time how difficult it would become as the war dragged on to maintain that spirit of enthusiasm.

Even the day of departure brought disillusion. The dreadnaughts anchored in the Jade and, for the time being, fleet, squadron, and cruiser staffs busied themselves primarily with the safeguarding of the German Bight and with the river mouths as bases. Very soon military interest was almost exclusively directed to this important, to be sure, but still subordinate and purely defensive task.

After the arrival of the fleet commander in Wilhelmshaven on 1 August, as a result of a meeting of the division commanders on the *Friedrich der Grosse*, the first orders in this direction were issued.

The commander of the scout vessels received the following order:

Commander of the scout vessels will protect German Bight.

By day, outer line, a torpedoboat flotilla at a distance of 35 nautical miles from the *Elbe I lightship;* inner line, a mine-sweeping division at a distance of 23 nautical miles from the *Elbe I lightship* between both lines, submarines; inside the inner line, small cruisers. At night outer line and submarines will be drawn in, inner line occupied by torpedoboat flotilla. FLEET COMMANDER.

For the present and for this purpose there were placed under the commander of the scout vessels all cruisers, torpedoboat flotillas, U-boat flotillas, mine sweeping divisions, aviators, and aircraft. The assignment of the mine-sweeping divisions and the old torpedo-boats in the patrol force with their slight armament and speed was decided upon as a last resource, because of the lack of other suitable vessels and an efficient patrol was deemed especially important, against penetration by enemy U-boats.

In addition to the orders of the High Sea Fleet the commander of the scout vessels issued day and night safety orders which as they were repeated for a time in similar form are therefore reproduced in this text:

Day Order.

4:30 a. m., Fourth Torpedoboat Flotilla forms position circle. Arc of circle distance 35 nautical miles from *Elbe lightship I.*

[9] The operation order itself is discussed in Ch. 2.

U-boats of the First U-boat Flotilla form a U-boat position circle distance 29 nautical miles from *Elbe lightship I.*

First mine-sweeping division forms position circle, distance 23 nautical miles from *Elbe lightship I.*

Torpedoboats and mine sweepers under orders of flotilla and division chiefs *Kolberg*, *Mainz* inner German Bight behind southern wing; *Danzig* behind northern wing. Seventh Torpedoboat Flotilla and rest of U-boats, Helgoland Harbor.

Hamburg and *Stettin*, Helgoland Harbor after U-boat line is formed.

Leader of the torpedoboats in German Bight is *Mainz* up to 4:30 a. m., then *Kolberg*. All battle cruisers Wilhelmshaven roadstead.

Defensive measures are particularly directed against U-boats and mine layers.

Night Orders.

8 p. m., night safe-guarding work begins.

Second Torpedoboat Flotilla position circle 23 nautical miles from *Elbe lightship I.* At 8 p. m., will sail back and forth normal to position circle.

Kolberg, *Hela* behind southern wing, *Rostock* as soon as possible square 158.[10]

In new harbor, Helgoland: U-boats, First Minesweeping Division coal ship, Seventh Torpedoboat Flotilla, ready to go out at once.

Torpedoboat V–5 and *Stettin* will safeguard new harbor of Helgoland. First and Third Torpedoboat Flotillas Altenbruch roadstead. *Cöln*, Fourth and Sixth Torpedoboat Flotillas ready for immediate exit. *Cöln* leader of the torpedoboats in the German Bight, Second mine-sweeping division arrives at Schillig roadstead to-day.

Airplanes will observe as much as possible before darkness.

The plan of the safety measures is clearly evident from these orders and is visually presented in chart 7. It must be noted that the mouth of the Ems is not included in the safety measures and this point will be referred to again.

The preparations for safety at night are more extensive in that four designated attacking flotillas are to be ready to sail from Helgoland, the Elbe, and in the Jade in the event that ships of the enemy are reported. Such a high degree of preparedness in attacking flotillas could only be provided for those nights which because of weather conditions or from explicit information forecasted an hostile attack.

These orders were followed on 2 August by the first publication of "Principles for the application of the safety measures for the period immediately following the outbreak of hostilities." It is emphasized there that this safety must be effective first against U-boats and second against mine layers.

Characteristics of this order is the assignment of the small older cruisers to patrol duty. It corresponded with the then held theory of the operation order discussed in the next chapter which presupposed a war of a few months duration only and the saving of the newer and more valuable cruisers for the definitely expected decisive battle. This order did not, however, consider that should the opponent proceed against the German Bight he might use his best material for this operation against which the older German cruisers

[10] See chart of squares (map 5).

would not be a match either in speed or in fighting power. Only through longer experience in the war was it recognized that in all cases that permitted a meeting with the opponent on the free and mine clear sea only the best and newest material was sufficient to avoid defeat, the main effect of which, even if the ship loss was negligible induced a lowered morale. As the constant stationing of only modern cruisers on the patrol line was itself forbidden by considerations of economy in material it would have been more correct to replace the maintenance of small cruisers at sea on patrol duty by a corresponding withdrawal of the patrol lines to within the protection of the coast batteries, and thereby remove from the enemy as far as possible valuable objects of attack. This knowledge was not gained, however, until after the first meeting with the enemy.

Again the "Principles" mentioned contained the following orders which are deemed worthy of discussion concerning the purpose and conduct of the day and night safeguarding work:

Day Protection.

Purpose of the day protection: Safeguarding the German Bight primarily against enemy U-boats, secondarily against mine layers.

Procedure in day protection: Torpedo-boats must not engage destroyers but give way to them, and should try to lead them and other light craft across the U-boat lines.

U-boats: If opportunity for firing is good, fire on destroyers and small cruisers.

Mine-sweeping division: Give way to destroyers at the right time (Helgoland Harbor, river mouths). If U-boats have entered the inner German Bight will try by zigzag course at high speed to make their stay difficult, compel them to dive frequently and to consume a great amount of current.

The torpedo-boat flotilla lying at Helgoland will go out as soon as enemy U-boats are reported and try to destroy them in a similar manner.

Small cruisers: Proceed against destroyers and light forces but, however, when U-boats are reported withdraw into river mouths and entrances.

No small cruisers should be exposed to U-boat attacks, least of all the new fleet cruisers.

Airplanes: Except for general observations should report principally U-boat and mining expeditions.

Night Protection.

Purpose of the night protection: Protecting the German Bight, especially against mining and blockading expeditions.

Procedure in night protection; torpedo boats: Destroyers and small cruisers, give way: reassume positions as soon as possible; attack mine-layers in full force.

Torpedo-boat flotilla should attack from Helgoland as soon as objects worth the trouble are reported.

All light forces should endeavor to prevent by all means blockading expeditions against the Jade and Elbe.

It is obvious that we are not concerned about our conduct in the face of heavy enemy forces. The question of the slight support of the protecting forces by large cruisers and ships of the line is intimately connected with this.

Only the attacks of enemy U-boats are considered as an essential danger for small cruisers to which the small cruisers must not be exposed but in such cases leave them for the torpedo boats and return to the river mouths. In the first year of the war there was evident quite generally what was considered from later experience a too high an estimation of the U-boat peril, both with officials in command as well as at the front, a point that essentially influenced the unusual retention of heavy fighting forces.

Mention has been made in the "Principles" of the scout work of airplanes and scouting in the air. The means for this were at the time, however, very slight. For the former there were available at first 6, later 9, airplanes in Helgoland, the employment of which could not be extended to more than 70 nautical miles from Helgoland. At first, however, their activities did not extend over an area more than 30 nautical miles from the base. Nevertheless, there was very soon instituted a regular early morning and evening search in allotted sectors. The only available airship, *L–3*, in the beginning made only practice trips on the German coast and reported its observations Regarding all orders issued to aviation forces, due consideration was given to the fact that these weapons were still in the first period of development. Especial value was attached to evening scout work, that undertakings planned by the enemy might be discovered and opportunities embraced for advancing our own line of scouts. Together with the safeguarding of the German Bight by the High Sea Fleet the mobilization of the coast defense was carried out as planned by the North Sea command and the several commandants. As called for in the mobilization order, mine obstructions were laid off the Ems, Jade, Weser, Elbe, and on the Lister Tief, and the arming of the coast fortifications was completed. The Elbe channel was still further protected by a ship obstruction at Cuxhaven. By the removal of light vessels, channel buoys, and especially prominent landmarks,[11] the otherwise dangerous navigation in Helgoland Bay was made still more difficult for the enemy. As a further result of the acute military situation the extinguishing of almost all lighthouses far up the river mouths was ordered, these lights were illuminated only on special occasions and by the request of vessels passing in or out. This system of defense developed and carefully thought out in peace time will be discussed later on in detail. For the present the statements made here will suffice, for during the entire period of the war with the exception of airplanes and U-boats, the enemy did not approach sufficiently close to our coast defenses on the North Sea to thoroughly test them out.

[11] To this measure was sacrificed the old Wangeroog Church Tower, known to all mariners, and which alone survived a tidal wave.

During the period of "strained relations" there was no mention made in any of the safety orders regarding the use of the scouting forces for the protection of the Ems. On the contrary the guarding of this river mouth was left exclusively to the coast defense and the forces allotted to it. Not until 3 August, when a declaration of war by England was imminent and the exit of destroyers from Dover had been reported, was the dispatch of the small cruiser *Mainz* with the Fourth Torpedo Boat Flotilla to this river's mouth ordered as a result of information received that the blockade might begin at any time. But a still more important task than merely keeping the Ems clear was planned for these forces. They were to operate against the rear of enemy torpedo boats, in case an attack was made against our ships in the river mouths, utilizing the flanking position afforded by the location of the Ems. In this undertaking the small cruiser *Arcona*, otherwise a part of the Ems coast defense, was to participate, although the suitability of this old, slow vessel, manned by a crew recruited during the mobilization, for such a difficult task may well be questioned. The task was of sufficient importance to necessitate specially picked cruisers for its execution. At first, however, as the Ems forces, due to the course of events, were limited to coast defense, scouting expeditions were not ordered.

The constant alertness of the lookouts of the protective forces and coast signal stations who earnestly believed that an attack of the enemy might come, resulted on the evening of the 3d of August, directly after the announcement of a state of war with France, to an incident which in those days was oft repeated at many points in Germany. At 6.22 p. m. the report was sent from the Wilhelmshaven information division that French aviators were on the way.

Between 10 and 11 o'clock in the evening aviators were reported with certainty at various places, chiefly by the coastal stations on land, and among others by the barracks of the dockyard division, the signal station of the third entrance, and from several points of the city of Wilhelmshaven, and these aviators were bombarded with a lively gun and machine-gun fire, which was repeated twice with brief intermissions. Nothing was seen by the ships. Such a general deception of this kind,[12] caused by quick moving clouds passing over the rising moon, did not again happen.

Merchant vessels were not much affected in the early day of "strained relations." Aside from a strict watch on incoming vessels, the entering of the harbors was not accompanied with any serious difficulties. In pursuance of an order which was regularly published in the "Notices to Mariners," the incoming ships after the beginning

[12] It was even reported by wireless that aerial bombs had exploded on the town hall of Wilhelmshaven, although actually nothing had occurred.

of the period of "war imminent" were concentrated at a point 10 nautical miles northwest of Helgoland, examined, and then led into the harbors under guard. A telegram of the Reichs-Marine-Unit of 1 August emphasized the fact, moreover, that all imports were urgently desired; especially ships with oil and petroleum should if possible be detained within German waters on the ground of a resolution of the Bundesrat (Federal Council). As late as August 3d the English steamer *Rossal* with a cargo of barley put into Bremerhaven, the steamer *Borderland* with iron put into Bremerhaven, the steamer *Borderland* with iron put into Hamburg; on the other hand, the departure of steamers of foreign nationality was permitted at the request of the Foreign Office up to 7 o'clock on the evening of 3 August. As late as the afternoon of this day several English steamers went down the Elbe, among them the *Liberty*, *City of Oporto*, and *San Wilfrido*, although at the time of their departure mine obstructions and war preparations of the channel as well as other preparations for war were self-evident to them. Only after the *San Wilfrido* had struck a mine in the mine fields at Cuxhaven and had sunk was the passage closed to merchant vessels by the commandant at Cuxhaven. This liberal consideration in the treatment of enemy merchant vessels at the beginning of the war on the part of the Germans, in spite of diplomatic agreements made on this subject (cf. App. 12a to d) was hardly reciprocated. While in the German ports only 1 Belgian, 1 Russian, 4 French, and 71 English steamers were seized, Germany lost through corresponding measures in England no fewer than 144 steamers; 12 were held in France and 30 in Russia.

Our own steamers arriving at this time reported extensive and active movements of English forces. These reports were sufficient to show the early activities and preparations for mobilization of the British Fleet and which their outward political conduct sought to veil. However, these reports because of their inaccuracy as regards time and place or through delay in receipt were only of slight military importance. Among other things the steamer *König Friedrich August* reported on 31 July that it had sighted off Cuxhaven on 27 July, at 9 a. m., the First and Third English Battleship Squadrons, a cruiser squadron consisting of ships of the *Invincible* class and another consisting of ships of the *Defense* class off Portland proceeding to the eastward and in the evening apparently the same forces with lights masked, were sighted off Dover. On the next morning these forces were off the Noord Hinder light vessel in rear of a scouting force of cruisers headed for the North Sea. Only subsequently was it learned from England that on the 29th the war insurances in that country suddenly increased three to four fold and that the Admiralty on the 30th had ordered fuel ships, and coal for the fleet in large quantities and that ship owners had detained their ships at home. At the same

time a naval engineer returning from leave reported that he had seen on the Thames on 30 July, 16 ships of the line (probably those of the Second Fleet), among them *Lord Nelson*, 4 smaller mine vessels, among them the *Jason*, and 4 mine cruisers, including the *Apollo*, with mines on board. The safeguarding of the Thames by outpost vessels and U-boats was arranged at this time and the Dover-Calais Straits were guarded by cruisers and torpedo boats. On the same day a German steamer had sighted several English squadrons consisting of 20 ships of the line, 4 battle cruisers, and 20 small cruisers off the Dogger Bank and Skagen and again on the night of the 31st of July, ships with screened lights were sighted about 40 nautical miles northwest of Helgoland.

It would seem then that at this time a patrol had been stationed off the German Bight. These statements concur with those of the S. S. *König Friedrich August*. On 31 July the steamer *Cincinnati* at Noord Hinder was certain of 37 English men-of-war, consisting of the torpedo-boat flotillas and cruiser squadrons. Again on 1 August the steamer *Ursula Rickmers*, en route to Bremerhaven, reported that it had observed English mine-layers operating off Portsmouth and had sighted numerous men-of-war in the Downs steaming to the eastward; the steamer *Rio Pardo* had observed a large number of British submarines in the Harbor of Dover, the steamer *Frankfurt* on the morning of 31 July at Eastbourne observed 5 small cruisers, and off Dover the battleship *Agamemnon* and 3 *Goliaths* on an easterly course, and off East Goodwin 4 *Majestics*. Of especial significance was another steamer report which stated that on 30 July between 4 and 8 p. m., 35 English warships had proceeded to the middle of the North Sea on a northwesterly course. Further reports were brought by the small cruiser *Strassburg* which on returning from abroad, after a trip made at minimum speed through the English Channel, entered Wilhelmshaven on 1 August at 8 p. m. In the Channel she had sighted the ships *Carnarvon* (Fifth Cruiser Squadron, *Agamemnon*, or *Lord Nelson*?) with three ships of the line of the Sixth or Fourth Battleship Squadron, and the *Skirmisher* with the Seventh Destroyer Flotilla as well as a cruiser of the "city" class. From the Isle of Wight on it was in touch with 26 vessels (small cruisers and destroyers) which were not lost until dark. At Sandettie Bank it had passed a circle of cruisers on patrol duty.

It was only just outside the German Bight that no English forces were sighted. On the other hand English, and Danish fishing vessels were at this time sighted in that locality, and it is strongly suspected that they were there for spying purposes, but it was not permissible to proceed against them with the desired severity.

For instance, on 1 August two Danish motor fishing vessels, proceeding from the Wangeroog, on meeting the Second Squadron off

the Jade acted suspiciously but were allowed to proceed; nevertheless they obtained information concerning the deployment of German forces. On 2 August the English fishing steamer *Zenobia* was stopped by the torpedo boat *G–111* and examined but by order of the fleet was merely instructed to leave the German Bight. Such vessels were only to be brought in when they offered resistance. On the day following another English fishing steamer from Grimsby was intercepted fishing 13 nautical miles north of Helgoland. Again in this case, though it was doubtless acting as an English observation post, this steamer was allowed to proceed that complications might be avoided. For this reason also after the beginning of a state of war with France the sailing of the auxiliary cruisers was not always permitted. Then as before the uncertainty of the political situation resulted in measures disadvantageous from a military standpoint.[13]

One should understand then that a general sigh of relief went up from the fleet when on August 4, at 7.30 p. m., a state of war with England was announced and thus the uncertain military situation ended. The close of the period of "strained relations" and the beginning of a state of war marked the first operation order of the commander-in-chief of the High Seas Forces, who, referring to the previous operation order of the Kaiser, gave instructions as follows:

First and Third squadrons and High Sea Forces of the North Sea that are in readiness: Jade.

Second Squadron and Baltic Forces that are ready: Elbe.

A convoy cruiser and a torpedoboat flotilla: Ems.

All cruisers, torpedoboat flotillas, U-boats, mine-sweeping divisions, aviators and airships are until further notice put under the commander of the scout forces who is intrusted with the protection of the German Bight and of the Ems.

Four U-boats at the discretion of the senior U-boat Flotilla chief will be kept in readiness to immediately proceed on long distance cruises.

The removal of the Second Squadron to the Elbe followed because of the better protection against torpedoboat and U-boat attacks which were expected at Cuxhaven, also the vessels of this squadron were not equipped with torpedo protective nets. A change in the organization of the patrol service of the German Bight resulting from the state of war just entered upon was not necessary, however, for with the readiness of the U-boats for distance operations, with the dispatch of auxiliary cruisers to the Atlantic Ocean and with the expedition of the *Konigin Luise* to the Thames offensive war operations were now begun.

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[13] Even on 4 August at 10 p. m. orders were issued by the Coast Defense Division of the Baltic *not* to search any vessels under the English flag.

(*End of Chapter 1.*)

CHAPTER II.

Reflections on the Operation Order.

In spite of all their endeavors and liberal concessions the political authorities were unable to keep England out of the war. England, on the contrary, as the Admiralty staff always expected, entered on the side of our enemies. In this way the continental war became a World War and the operations on the sea acquired a decisive significance. England was now the motive force, the binding link of all the allied powers, whom she firmly united, and thereby our chief opponent—this must never be lost sight of. But while in a struggle directed exclusively against France and Russia, the comparative strength of our fleet on the sea would insure a field of activity that would extend over all seas and would be limited only by the coasts of our opponents, the unfavorable political situation confined the activities of the German Fleet to a limited area due to the result of the geographical situation and without allies that added to her strength on the seas she was thrown upon her own resources in contrast to the great superiority of England and her allies. The lack of bases of her own outside the home waters—as was also the case of her allies—limited the activity of her fleet to the North and Baltic Seas. However, in order to properly evaluate the significance of this limitation it is necessary to retrospect somewhat.

The major operations of a war include the activities of the army and the navy. Both are intimately connected and mutually dependable one upon the other. Between the conduct of the war on land and that on water there are differences, however, which were not always distinctly recognized and correspondingly understood.

The army and the navy have in common the task of forcing the hostile nation into a situation that will make it consider peace more desirable than the continuation of the war, in other words breaking the morale of the opponent. While the war on land strives to attain this result through the annihilation of the enemy's armies and occupation of the enemy's territory, the naval war can not attain its goal so directly. The coast line of the enemy calls a halt to the forces afloat. They are unable to penetrate the enemy territory to the seat of the enemy's organization. The sea itself, however, belongs not to any one nation, but to all nations in common; acquisitions of territory on the mainland does not alter the situation; only with difficulty may neutral shipping be excluded from fixed areas of the sea. The value of the sea can therefore best be expressed by the short sentence of the geographer Ratzel: "The sea is only the way;" it is, however, the greatest and most important highway on this earth, and not to be compared with any other in economic, military, or political considerations. The maintenance of or the gaining of the mastery of this

highway is the main object of naval warfare. The mastery of the sea is nothing more than the control of this sea route. All nations, as well as the belligerents, have rights on this highway and use it according to their position and economic needs in various ways. Hence it follows that any military influence may at once affect and injure neutral interests. This applies to the blockade itself and is especially so if in extending a blockade the cutting off of an entire section of the sea is accomplished. In this war, in which the British Fleet doubtless controlled the sea it was nevertheless, in order to maintain control under the sea as it were, compelled to wage an exasperating war against U-boats. The naval war has for these reasons a stronger political effect than does land warfare, for the latter less directly affects neutrals.

Further, an economic pressure on land is only possible after victory or the acquisition of territory. On the sea it is felt immediately and directly. Concerning its effect Vice Admiral Maltzahn states in a treatise as follows:

> Not only will the coast suffer, if the enemy closes our harbors, but also the entire country. His vessels must come to a halt at the coast line, but over beyond the coast stretches the iron hand of sea supremacy; it knocks at the office of the merchant far inland, at the doors of the factories, at the great interior centers of industry as well as at the door of labor.
>
> Such vulnerability to naval warfare, which for England has always been present, has gradually assumed the same proportions to the continental countries, and thus we find the conditions that existed at the end of the Napoleonic wars reversed. The economic dependence of the Continent upon England which existed at the beginning of the last century does not now to the same extent exist. It has become a military question and has made the continental countries more vulnerable to England's main weapon, sea power. Hence they, the competitors of England, have been forced to a program of naval construction corresponding to their share of the world's commerce unless they were content to live on the good will of England.

In the above depicted nature of naval war, therefore, together with the relative strength which will be discussed later, the position of the military ports and of the bases with reference to the lanes of commerce is of supreme importance. Both factors limit the possibilities of operation.

If in this consideration one disregards for the moment the connection between Kiel Bay and the North Sea via Skagen, for it was actually used to a very slight extent for a considerable period after the beginning of the war, the reasons will be discussed later on why in a war against England the German Bight was our only basis of operations.

After the cutting of German transoceanic communications with all the important lanes of commerce it lay quite evidently at a standstill. The source of the world ocean commerce rises on the British west coast and flows along the coast of England, finally reaching Germany. England occupies about the same position to the coast

of Germany as does the island of Helgoland with reference to the mouth of the Elbe—that is, England by its geographical position blockades us; she may strangle the lanes of commerce to our harbors and bring our trade to a standstill without even her fleet striking. But after the outbreak of the war no commerce route existed in the North Sea within the vicinity of the German Bight. The trade coming from the ocean was escorted to the Thames under the guns of Dover or if coming from the north was assembled on the Scottish coast and convoyed to ports along the English coast. The Baltic trade went from the Skagerrak to Scotland and there united with that of the world. The distance from Helgoland to the commerce route in the Skagerrak was too great for any real effective opposition on the part of surface vessels.

To summarize, it follows that the British Fleet may perform its main mission by merely concentrating at the outlets of the North Sea. The control of these outlets covers the British communication lines from the ocean as well as from the Skagerrak; it safeguards English trade along the British east coast; it cuts off German trade from the ocean; it protects the British Isles against invasion and at the same time its own troop transportation across the Channel to the mainland. Only one objective required more than a defensive, and that was the destruction of the German Fleet. To attain this the English were compelled to strike. But this was not necessary until the German Fleet endangered the other so-called missions of the English Fleet.[14]

As ardently as the destruction of the German Fleet was desired at the beginning of operations yet the risk for England was too great. The strangling of German trade was possible without losses, easy to accomplish, and hence was before the minds of all. If the war could be won in this manner, then the destruction of the German Navy could afterwards be obtained as a peace condition.

On the contrary, the German Fleet as a result of its unfavorable geographical position could only inflict injury to the English Fleet and thus offer protection to German transoceanic commerce by winning the mastery of the sea in a series of victorious battles. It is a question how far relations of strength and the position of the bases in the North Sea operations permitted the attaining of this end.

The development of the strength ratio, up to the outbreak of the war, depended upon the naval law of 1900. This stated:

> Germany must have a fleet so strong that even her strongest opponent will hesitate to use its own force through fear of the dangers connected therewith.

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[14] In contrast to this the geographical position of Germany as regards the Baltic may be considered favorable. Here the Russian Fleet assumed the same status as did our own when compared with the English in the North Sea.

An English attack in the Baltic could be countered by us with a prospect of success, as the Kaiser Wilhelm Canal is an interior communication line. As the Baltic War has not been especially discussed, no further mention will be made concerning the Baltic theater of war.

The never-forgotten attitude of our naval legislation was therefore one avoiding war and a purely defensive status, which fact must be borne in mind in a comparison of the forces available at the outbreak of war.

Compared with the dreadnaught tonnage of the Triple Alliance of 800,000 tons that of the Dual Alliance was but 400,000 tons. If, however, we consider only the comparison of strength of the forces on the English and German sides available for a naval battle in the North Sea, for the Allies of England did not appear in this theater of the war, then we have the following table:

August, 1914.	Dreadnaughts.		Older battle-ships.	Older large cruisers.	Small cruisers.	Destroyers.		U-boats for full offensive.	Offensive condition, coast-defense.
	Line ships.	Battle cruisers.				Newer.	Older.		
English....	20	4	36	20	35	78	77	7	51
German...	13	3	22	5	14	42	46	10	18

Hence there were only 16 German dreadnaughts to 24 of the English. The ratio was 2 to 3. It appears even more unfavorable if we consider the five additional English battle cruisers, one of which, the *Invincible*, was undergoing repairs, another, the *Australia*, was in the South Seas, and the *Inflexible*, *Indomitable*, and *Indefatigable* were in the Mediterranean. The latter ships could at any time appear in the North Sea theater of war. Considering these battle cruisers, the ratio becomes 16:29 or 1:1.8, an almost double superiority in dreadnaughts on the side of the English.

Both fleets in the first half year of the war received additional strength resulting from new constructions. The increases, with times of placing in commission, were as follows:

England.		Germany.		
Name of vessel.	When placed in commission.	Name of vessel.	Placed in commission.	Ready for service.
Agincourt	Aug. 7, 1914	Grosser Kurfürst	July 30, 1914	14 Sept.
Erin	Aug. 22, 1914	König	Aug. 9, 1914	15 Feb.
Tiger	Oct. 3, 1914	Derfflinger	Sept. 1, 1914	14 Nov.
Queen Elizabeth	Oct. 2, 1914	Markgraf	Oct. 1, 1914	15 Feb.
Benbow	Oct. 7, 1914	Kronprinz	Nov. 8, 1914	15 Feb.
Emperor of India	Oct. 12, 1914			
Canada	Nov. 12, 1914			
Invincible [1]	Nov. 27, 1914			

[1] After completion of repairs to bottom.

The increases resulted in the same ratio and therefore did not change the original strength ratio.[15] The number of older ships of the line is of slight significance as regards the possibilities of operation.

[15] It is to be noted that the date of placing in commission is not synonymous with the time of readiness for service, the latter being dependent on the outcome of the trials and the formation of the crew, and in individual cases requires very different periods of time which, however, because of the uncertainty as to the time of readiness for service of the English vessels, should not be considered in the comparison.

It soon became apparent that the fighting qualities of these vessels were no longer equal to the effect of the modern weapons, the mine and the torpedo. Aside from the eight vessels of the *King Edward* class and the ships of the *Deutschland* and *Braunschweig* class, which at the beginning of the war were still considered as belonging to the first battle line, the other ships of the "predreadnaught" type in the North Sea sector were of importance only as reserve material which would be utilized for battle only after great losses in dreadnaughts on both sides. Even here the considerable superiority of the English would make itself felt, even though a major battle resulted in considerable losses in dreadnaughts for both sides.

In judging the possibilities of operations, aside from the strength ratio in dreadnaughts, the ratio between scout vessels and torpedo boats is important. If we combine large and small cruisers, then England had almost three times as many cruisers available and in torpedo boats more than double.[16]

The increase up to the early part of 1915 makes even a higher ratio for on the English side there were at least eleven vessels of the light cruiser type to be added and these were offset by only three new constructions on the German side. Similarly a disproportionately greater increase in torpedo-boats was to be expected on the English side. On the other hand the strength ratio of the seagoing U-boats was favorable.

For the estimation of the prospects for success there is required the analysis of the efficiency of the individual types of ships which is of especial significance. For this we have the following considerations: The *caliber* of the main battery was greater on the English side than on the German, 13 English dreadnaughts had 34.3 cm., the rest 30.5 cm. guns, while of the German vessels only nine had 30.5 cm., the rest were equipped with 28 cm., guns. In the *number* of guns, however, the German dreadnaught was twice the superior, on the average, of the English vessel of the same type; as a result of the position of the turrets, however, the *Nassau* and *Ostfriesland* classes could not fully avail themselves of this superiority in broadside. A comparison of the smaller sizes of German caliber showed a greater explosive effect and a greater penetrating effect of the shells but only the results of the war could afford a proof of the correctness of these conclusions based on range results and assumptions derived from theoretical calculation. Also the opinion as to the speed of the British dreadnaughts was, without actual experience, still an uncertainty; however, this question was, in contrast even to the opinion

[16] Among these were 25 new torpedo boats belonging to the patrol flotillas, provided only for coast defense, and thus not included, and also four large and small cruisers in the Mediterranean, in addition to the vessels undergoing overhaul.

of our gunnery work at the front, rather too optimistically regarded with reference to the performances expected from German vessels, especially the battle cruisers.

On the other hand the strength of the German vessels doubtless lay, especially for night fighting, in their numerous and efficient secondary battery with which only the English dreadnaughts from the *Iron Duke* on were equipped. The latter especially as regards strength of armament as well as underwater protection and hence in rigidity and buoyancy were inferior to ours, also the superiority in torpedo weapons as well as the great explosive effect of the torpedo was to be counted as an advantage to the German side. The utilization of this superiority was, however, limited by the fact that battle in most cases must be fought at long range by heavy caliber before the torpedo can be employed, hence in many cases the torpedo did not come into action.

The older vessels of the line in size and gunnery armament were on the average behind the English vessels of the same type. The ships of the *Kaiser Friedrich* and *Wörth* classes were in all operations because of their inferior speed and insufficient armor protection unsuited for employment in the line and were used only for special purposes.

The British Navy accomplished the transition from 10.2 cm. to 15 cm. on the small cruisers by a considerable increase in displacement and expense in the year 1910. The vessels of the "City" class armed with eight or nine 15 cm. guns were therefore superior to the German cruisers of the same period in guns but not quite equal to them in speed. Even the newest small British cruisers and flotilla flagships were not greatly superior in speed to the corresponding German ship classes. The *Boadicea* class employed as squadron convoy cruisers and the type of the older flotilla flagships (scouts) were, although the battery was practically the same, inferior to our cruisers in protection, sea worthiness and radius of action.

On our torpedo boats the light battery was explained by the fact that on the German side the torpedo boat was considered to be first of all the carrier of the torpedo and that this special quality ought not to be sacrificed for a heavier battery. In torpedo armament therefore the German boats were far superior to the English. Only from the L-class on did these have double tubes and first with the G-class, 1908–09, 53 cm. torpedoes. The English boats, at least the majority of the destroyers of the active flotillas possessed on the contrary the advantage of pure oil firing. The coal firing or mixed firing used by us offered on the contrary the advantage of greater safety. The twelve boats which according to the peace plan were to come into service in the fall of 1914 were the first pure oil boats.

A very considerable disadvantage in operations up to the English coast was that of the comparatively slight steaming radius of the torpedoboats. By this factor not only the possibility of extensive torpedoboat attacks, covering several days, was considerably reduced but also on account of the indispensability of torpedoboats for U-boat defense on the expeditions of the battleships the scope of employment of the entire fleet was unfavorably influenced.

Advantages and disadvantages of the individual ship types on both sides have been mentioned; final judgment, however, had to be reserved for this war for technical development had progressed with such gigantic strides that the experiences of earlier naval wars, even that of the Russo-Japanese War, enabled no decisive judgment to be formed as to the superiority of this or that type of vessel at the beginning of the war. As long as this question was not definitely decided in favor of one side, the efficiency expected by both those in authority and the personnel along with other unsolved problems must play an important role.

The efficiency of the English naval officers was fully appreciated by those in our service. The training was careful and lasted from sublieutenant on for almost seven years. The courses of instruction for specialists, although shortened in recent times as a consequence of the better technical preparation of the officers, was still very long. For further professional training provision was made by the Admiralty staff courses and the older officers at the station harbors. By promotion by selection up to captain ambition was maintained and the most capable officers enabled to obtain command positions when young. The naval officers were at sea comparatively a large part of the time; the number of positions on land in comparison with the size of the officer corps were comparatively few. Nautical experience and the state of being accustomed to the sea were therefore highly developed. Scientifically, at least, the German officer corps stood higher as a consequence of the better German school training.

The English noncommissioned personnel was held in just as high esteem. The long period of service of the petty officers and men and a tradition fostered by every means justified the assumption that the English noncommissioned personnel would fully meet the demands made upon it. By enlarging the ship boys' institute it was brought about that the greater part of the seamen reserve was composed of former ships boys for the proper training of whom the greatest care was employed. The time required for the gunnery and torpedo instruction was so long that a fundamental special training was afforded. In the choice of a career the men were given the greatest freedom. Almost as a rule advancement was not according to years of service, but as the result of an examination which was open to aspirants after a minimum period of service. The assertion made in the press

from time to time by some discontented ones of a far-reaching discord among the English petty officers and men rested on exaggeration. A lack of personnel, which was likewise asserted in both the domestic and foreign press, could not be proven. Indeed, according to calculations the present active personnel was sufficient for the event of mobilization of the First and Second Fleets, vessels abroad, all torpedo boats and U-boats, and to fill the half-crew requirements of the Third Fleet. Also for new construction which was hastily being completed during the war there was sufficient personnel. For the manning of the other ships of importance, and finally for the land stations, the number of the reserves was on the average sufficient.

Of course, any judgment of the efficiency of the personnel was in the end subjective. Of especial significance for this estimation was therefore the opinion of the responsible leader of the attacking forces. The latter, Admiral von Ingenohl, stated as follows:

> The proud old tradition of the English Navy, its good nautical knowledge, and the thorough training of the personnel, especially in shooting, facilitated by the long period of service, the nature of the English people long known as brave and tenacious, and finally, the commanding officers, esteemed as capable and diligent, forbade any underestimation of the enemy so that in any case in spite of the highest estimation of the efficiency of our own personnel, a particular superiority on our side—apart perhaps from the more thorough training of the fleet on the battle line even in the face of great hindrances to fighting and the better training of our torpedo-boat personnel—could not at the beginning of the war be taken for granted.

A further ground for strategical reflection lies in the question of bases. The position of the German and English bases with reference to the commerce lanes, together with the resulting conclusions, has already been discussed, and the position of the English bases with reference to our own base of operations is evident from charts 5 and 6. The following conclusions may be drawn from the above:

The English Fleet has as points of departure for movements in the North Sea the entire British coast from the Shetlands to the Thames. Through the great number of harbors and bays, this coast becomes a single long base of operations, the southern wing of which lies opposite the funnel-shaped German Bight. Any advance of our forces from there will therefore be flanked by the English positions; any English advance is safe from flank surprise attacks because of the lack of flanking positions on our side. Borkum and List, as entrances to the German Bight, can not enter into this consideration. All the danger for an English force approaching our coast comes only from the German Bight, that is, from ahead. The English in their undertakings need only to watch the German Bight on which they proceed in concentration. If, on the contrary, the High Sea Fleet makes an advance toward the English coast then the danger exists that it may be cut off from the north, south, or from both directions. If it turns northward toward the Skagerrak or the Norwegian coast then

it has to contend with a menace to its line of retreat from the west. Any countermove will be made easier for the enemy by the circumstance that there can be no doubt as to the German line of retreat, as it is the only one, apart from the route around Skagen.[17]

Accordingly, all German operations were influenced by the fact that outside of a certain limited area in view of the enemy's superiority in numbers would increase the danger of our being attacked in an unfavorable position. To sum up, ratio of strength and geographical position, both of the most important strategical factors, were against us, whereas the performances of the personnel and the quality of the material maintained the balance. In view of these conditions the result of a decisive battle without previous equalization of strength must at least be doubtful. Under these circumstances considerations acquire a significance of another kind.

The question of the employment of the fleet is not exclusively a maritime one but rather is essentially influenced by the state of the war on land and political considerations; therefore it had to be subordinated by the supreme military and executive authorities to the plans for the conduct of the war as a whole and to politics. Unfortunately it was neglected before the war on the basis of this view to insure a strict cooperation of the proper authorities, somewhat in the manner of the English committee on defense of the realm. For example, both army and navy repeatedly urged the organization of an economic general staff, but the civil officials always refused this demand. The attempt did not succeed, therefore, of closely combining political views and military demands for the erection of an operation plan embracing as a unit the army, navy, politics, and economy, and thereby from the outset applying all the forces of the nation at the most suitable point for winning the victory.

The attitude of the neutrals was politically obscure and very uncertain, as especially on all coast countries the invisible but heavy pressure of the English Fleet began to make itself felt immediately after the outbreak of war. Accordingly, it had to be considered what the consequences would be if the fleet undertook an immediate decisive battle in the North Sea and was defeated. It might happen, then, in the course of events, that our imports from the northern kingdoms would be cut off, while Russia's sea route would be open. The danger of English and Russian landings at any points on our coast would have caused the army perhaps during the decisive battle in the west to send indispensable forces. England could compel the northern countries in any case, particularly Denmark, to be neutral. Furthermore, an unfavorable reaction on the attitude of Turkey and Italy,

[17] It is not necessary in this connection to enter into the question of how far English and German bases were equal to an attack by naval forces. The treatment of this question is therefore postponed until the narration of the first German attacks on the enemy coast.

as well as later on Bulgaria and Rumania, was certainly to be expected. But if England succeeded by defeating our fleet in obtaining the unlimited supremacy of the sea in our waters, then she would be in a position, in spite of all victories that we might win on land in France, Russia, and against the nations aiding England, to dictate to us a humiliating peace. On the other hand, one could hope, to be sure, by a successful naval battle, even if this did not break up the English blockade, to so seriously damage British sea power that this loss of prestige might decidedly influence in the favor of Germany the attitude of the aforesaid States and even America. Consequently the Admiralty staff could not close its eyes on the political consequences in the event of a defeat and indeed was all the more inclined toward the assumption of the strategic defensive on the sea against England because it believed it could obtain later more favorable military conditions for the decisive battle than at the outbreak of war. In the first place the start must be made good which the trial mobilization of the British Admiralty had made possible for the preparedness of the reserve units. Further, a valuable addition of especially strong units and efficient torpedo boats and U-boats was in prospect.

Meanwhile it was hoped by energetic defense against the expected English blockade, by damages to British blockade forces in attacks from a defensive position, as well as by an unrestricted mine and U-boat offensive carried on against the British coast, to reduce the British superiority to a considerable extent. Then only, if the personnel and matériel preparedness of the reserve units and of the new vessels to be commissioned permitted a combining of all available forces, the decisive battle should be ventured.

The demand of the statesman in authority went further, however. In disregard of the fighting power of the German High Sea Fleet, founded on spirit, training, and matériel, he considered it, as he often and expressly emphasized, necessary and proper to keep the fleet from loss up to the time of peace that an impressive political means of power for the negotiations might be at hand. This train of thought presupposed a rapid decision of the war on land in our favor. After the entry of England such could no longer be counted upon. There was in this an underestimation of the effectiveness of the English Fleet, which at the beginning was also shared by the supreme army command. On the political side it was even stated that a German Fleet attack might particularly irritate England and thereby strangle at the outset any possibility of peace.

It is obvious that the Admiralty staff could not share this conception held by the political powers as it even limited the decision for the strategical defensive, paving the way for an equalization of forces by the statement that any favorable opportunity to strike must be taken advantage of at once. For on this point there was no doubt of its

stand; it was to be kept in mind that between the German and English defensive on the sea there was as essential difference, England was from the start in possession of the sea routes and thereby of the supremacy of the sea as far as was necessary for military purposes. Germany, on the other hand, must first try to win the supremacy of the sea so as to bring destruction on English commerce and to make the routes free again for its own inports. For England then it was a question of maintaining, for Germany of winning the supremacy of the sea. The desire for a fight must have been greater on our side than on the English.

The Admiralty staff, while advancing the aforesaid reasons for the expectancy of an English offensive did not sufficiently emphasize this principle of a more vigorous application of the fleet on the high seas for the bringing about of the equalization of forces but rather at first political requirements only were the cause of restricting our fleet as long as possible to threatening the English supremacy. The commander-in-chief of the fleet had the heavy responsibility of this. Neither personal bravery, nor straightforward manliness, nor logical understanding, nor learning, could decide the issue. Only a great leader, a genius, could on his own responsibility tear the fleet away from the difficult and compulsory defensive, interpret the confining orders with a far vision and a big heart and recognize the time and place for the throwing in of the forces bound up in the fleet. To win such a decisive battle under the conditions in prospect if the opponent did not expose hemself was indeed hardly possible even for such a leader. Therein lies the great contrast between the conduct of the war on land and sea under the conditions of the World War.

Operation Order for the North Sea Sector.

His Majesty the Kaiser has ordered for the conduct of the war in the North Sea:

1. Aim of operations must be to damage the English fleet by offensives against the patrol and blockade forces of the German bight as well as by an unrestricted mine, and if possible U-boat offensive, carried as far as the British coast.

2. When by this conduct of the war an equalization in forces has been secured then the attempt must be made, according to the preparedness and make up of all forces to throw in out fleet for battle under favorable conditions. If a favorable opportunity to strike occurs sooner then this must be taken advantage of.

3. War on commerce is to be conducted according to prize laws. To what extent it is to be applied in home waters the commander-in-chief of the high seas units will determine.

All vessels intended for war on commerce now in foreign waters must be brought back as soon as possible.[18]

[18] For the sake of completeness the operation order for the Baltic sector is given in Appendix No. 11.

(*To be continued.*)

ACCOUNT OF THE BATTLE OF SKAGERRAK.

4 July, 1916.

A free translation of an article entitled "Authentic Account of the Battle of Skagerrak," appearing in the Deutsche Tageszeitung No. 571 of 8th December, 1920.

Strictly Secret.

The following report of the operation of 31st May and 1st June of the battle of Skagerrak is respectfully submitted to your Imperial Majesty:

The Object of the Operation.

Two advances had been planned for the operation; one in the northwesterly direction against the English coast, the other northward into the Skagerrak.

The advance towards the northwest seemed to promise the most effective results and was therefore given first consideration. Accordingly all the airships were held in readiness for this enterprise from 23d May on.

Unfortunately the weather was not favorable. The fleet waited in vain from the 23d to the 30th of May for a suitable day for the air reconnaissance.

As there was still no prospect of improvement in the weather on the 30th of May, and as the U-boats could no longer be left in the attacking position, I determined to relinquish the operation to the northwest and carry out the project to the north.

Preparations for the Advance.

The commanding officer of the scouting ships, Vice Admiral Hipper, was ordered to leave the Jade at 4 o'clock on the morning of 31st May, with the First and Second Scouting Groups, the second Flotilla leader on board the *Regensburg*, and the Second, Sixth, and Ninth Torpedo boat Flotillas, and when out of sight of Horn Reef and the Danish coast to press forward toward the Skagerrak, showing himself before dark off the Norwegian coast, that the English might become aware of his movements, and during the late afternoon and the following night carry out attacks against the cruisers and merchant vessels in the Skagerrak.

The main body, consisting of the First, Second, and Third Squadrons, the Fourth Scouting Group, the First Flotilla leader on board the *Rostock*, and the remainder of the torpedo boat flotillas, were to follow at 4.30 a. m., screen the scouting forces during their operation, and join them on the morning of 1 June.

The outlying U-boats were instructed by radio that they might expect a sortie by the enemy forces on 31 May and 1 June.

The Course of the Operations—Up to the Meeting of the Enemy.

The High Sea forces steered for the open sea over the course cleared for them by the mine-sweeping formations through the mine fields west of Amrum Bank.

Air scouting was impossible at first because of weather conditions.

At 4.28 p. m. the leader of the Fourth Torpedo Boat Half Flotilla, which had been sent by the *Elbing*, the western wing cruiser protecting the commander of the scouting group, to investigate a steamer, reported certain enemy forces 90 miles to the west of Boobjerg.

The enemy, consisting of eight small cruisers of the *Caroline* class, immediately turned away towards the north when sighted by our forces. Our cruisers started in pursuit.

At this time, 5.20 p. m., the commander of the scouting forces sighted to the westward two columns of large ships steaming on an easterly course, which were soon made out to be six battle cruisers, three *Lions*, one *Tiger*, two *Indefatigables*, and other light forces.

The commander of the scouting forces called back the Second Scouting Group, which was forging northward, and proceeded to the attack.

The enemy developed his line of battle towards the south. The commander of the scouting forces followed this movement, which was highly gratifying, as it afforded him the possibility of drawing the enemy within reach of the German main body. He accordingly deployed his forces at an effective range and at 5.49 p. m. opened fire at about 13,000 meters.

First Phase of the Battle—The Cruiser Engagement.

The commander of the scouting forces held the enemy at an effective range. The aim of the batteries was good, and hits were observed on all enemy ships.

At 6.13 p. m. the armored cruiser standing last in the line (the *Indefatigable*), under fire from the *Von der Tann*, went down with a terrific explosion. Superiority in gunfire and the advantage in tactical position were decidedly on our side until 6.19 p. m., when a new division, consisting of four or five vessels of the *Queen Elizabeth* class, with marked superiority in speed, appeared from the northwest and joined in the fight at an initial range of 20,000 meters. The position of our cruisers thus became critical. The new opponent fired with remarkable rapidity and accuracy.

At 6.30 p. m. the Ninth Torpedo Boat Flotilla advanced to attack under heavy enemy fire. Twelve torpedoes were fired into the enemy's line at ranges from 9,500 to 8,000 meters. It was impossible to press the attack at shorter range, as 15 or 20 English destroyers screened by small cruisers advanced simultaneously with the Ninth Torpedo Boat Flotilla in a counter attack to repel our torpedo boats. A genuine torpedo boat battle ensued at very short range (1,000 to 1,500 meters).

On our side there were sunk by enemy shots of heavy caliber the *V–27* and *V–29*. The crews of both boats were rescued by the *V–26* and *S–35* under the enemy's guns.

Two, perhaps three, destroyers were sunk on the enemy's side, two more were so severely damaged that they were left helpless, and later fell a prey to our main body.

At 6.30 p. m., a violent explosion was observed on the third armored cruiser of the enemy (*Queen Mary*). When the smoke cleared away the cruiser had disappeared. Whether the destruction of the *Queen Mary* was due to the gunfire or to a torpedo from the armored cruisers or to a torpedo from the Ninth Torpedo Boat Flotilla can not be determined. Probably it was the work of the guns.

The Second Phase of the Battle—The Pursuit.

It now became the task of the main body to relieve the materially weaker armored cruisers as promptly as possible and if possible prevent the premature withdrawal of the enemy.

At 6.32 p. m. the fighting lines came into view.

At 6.45 p. m. the Third and First Squadrons opened fire, while the commander of the scouting division, with the forces assigned to him, placed himself at the head of the main body.

The phase of the battle which now followed took the form of a pursuing fight.

Our scouts endeavored to follow closely on the heels of the battle cruisers and our main body on those of the *Queen Elizabeths*.

The hope that one of the pursued ships would be disabled and fall a prey to the main body was not realized, although our guns did good work, and at 7.30 p. m. it was clearly observed that a ship of the *Queen Elizabeth* class, after receiving several hits, turned out and at slow speed and with a heavy list towards the disengaged side drew out of the fight.

At 7.20 p. m. the fire of the First Scouting Group and of the ships of the Fifth Division appeared to become weaker, and the fleet commander was under the impression that the enemy had succeeded in escaping and therefore issued to the commander of the scouting forces and to all the forces engaged, the order: "Cease pursuit."

The weather which had been clear at first had meanwhile became thicker. The smoke of the powder and from the funnels clung to the water and made it impossible to see anything to the northward.

The Third Phase of the Battle—The Battle Proper.

It must have been at about this time that the union of the English main body under Admiral Jellicoe with the previously pursued forces under Admiral Beatty took place.

As a result there developed at about 8.10 to 8.35 p. m., at the head of our main body, a violent action around the damaged *Wiesbaden* in which the ship's torpedoes were turned to account.

Apparently the First Scouting Group and the leading ships of the Third Squadron had to repel the attack. During this action the

armored cruisers were forced to turn away so far that at 8.35 p. m. I found it necessary to change the line to a westward course by a full turn to starboard.

Immediately following this maneuver of the line the enemy's fire died down for the time being, in part because the smoke developed by the torpedo boats for the protection of our line, especially the armored cruisers, hid everything from him, but *chiefly because of the serious losses which he had sustained.*

In known losses (ships sunk) were observed: One ship of the *Queen Elizabeth* class (name unknown), 1 battle cruiser (*Invincible*), 2 armored cruisers (*Black Prince* and *Defence*), 1 small cruiser and 2 destroyers (1 marked "*04*").

Heavily damaged and partly on fire were 1 armored cruiser (*Warrior*, sunk later), 3 small cruisers, 3 destroyers.

On our side we had only the *V–48* sunk, the *Wiesbaden* rendered unmanageable, and the *Lutzow* so seriously damaged that the commander of the scouting forces was compelled to abandon the ship at about 9 p. m. under enemy fire and have himself transferred to the *Molke.*

When the enemy was compelled to cease firing against our line steaming on its westward course, he threw himself upon the already seriously damaged *Wiesbaden.* As could clearly be observed, the ship defended herself with bravery against the overwhelming superiority of the enemy.

It was still too early to begin the night march. The enemy would have had us at his mercy while it was still light and might have deprived us of the freedom of decision and finally have prevented our withdrawing into the German Bight. There was only one way to forestall this. By one more reckless dash to deal the enemy a second blow and throw the torpedo boats violently into the attack. Accordingly, at 8.55 p. m., the line was once more turned to starboard on an easterly course, the armored cruisers were ordered to engage the head of the enemy's line with full power, all torpedoboat flotillas were ordered to join in the attack and the first leader of the torpedo boats, Commodore Michelsen, was directed to have the crew of the *Wiesbaden* picked up by torpedo boats.

The battle which developed from this movement very quickly became similar to that of 8.35 p. m.

The fire directed by the enemy against our line was concentrated especially upon the armored cruisers and the Fifth Division. The ships suffered all the more severely because all they could see of the enemy was the flash of his salvos while they themselves apparently offered a very good target.

The behavior of the armored cruisers in particular deserves the highest praise.

Equally praiseworthy was the leadership of the Third Squadron (Rear Admiral Behncke) and the behavior of the ships of the Fifth Division. They and the armored cruisers bore the brunt of the fight and by so doing enabled the torpedoboat flotillas to cooperate effectively.

The boats of the Sixth and Ninth Flotillas, occupying a position forward alongside the cruisers, attacked first. They were followed by the Second and Fifth Flotillas from the main body.

The Sixth and Ninth Flotillas drew upon themselves in their advance the violent gunfire which had hitherto been directed upon the armored cruisers, but they carried the attack up to 7,000 meters against the center of an encircling line of more than 20 dreadnaughts steaming on SE., circular course, and fired their torpedoes under favorable conditions. In this attack *S–35* received a heavy hit amidships and sank immediately.

All the other boats escaped and as they turned back spread thick smokescreens between the enemy and our main body as protection to the hardly pressed head ships.

Our object was accomplished by the onslaught of the torpedo boats.

At 9.17 p. m. the line was therefore turned about, first on a westerly course and then by successive turns brought about to a southwesterly, southerly, and finally southeasterly course.

The enemy fire very soon died down after our countermarch.

The enemy must have *turned away* under the attack by the Sixth and Ninth Torpedo Flotillas.

The Night March and Night Engagements.

From the reports of the torpedoboat flotillas concerning the strength of the enemy sighted, it became a certainty that we had been engaged in battle with the entire English Fleet. It was to be fully expected that as night came on the enemy would endeavor to drive us westward, first with his heavier forces and later, during the night, by destroyer attacks, in order to bring us to battle when it became light. He was strong enough to do this.

The leader of the torpedoboat forces deployed the torpedo boat flotillas on a line ENE. to SSW., that is to say towards the direction in which the appearance of the enemy main body must be expected.

A large number of the boats had already fired their torpedoes in the day action.

Hence, only the First, Fifth, Seventh, and part of the Sixth and Ninth Flotillas went forward to the attack. The boats had had various night actions with the light forces of the enemy, but had found no traces of the main body. *L–24* had sighted in the early morning a portion of the main body in the Jammer Bay. The enemy had therefore withdrawn to the north after the battle.

The battleship squadrons from now on proceeded in the following order: First Squadron, Fleet Flagship, Third Squadron, Second Squadron; the First and Third Squadrons in reverse order. The *Westfalen* (commanded by Capt. Redlich) was leading ship of the line.

During the night the enemy attacked from the east almost without interruption with light forces and at times also with his heavier vessels.

The Second and Fourth Scouting Groups, and above all the ships of the First Squadron (Vice Admiral Schmidt) had to repel these attacks.

Their Success was Magnificent.

Entirely unaware of what lay before her, at 2 a. m. an armored cruiser of the *Cressy* class (name not made out) approached the end ships of the First Squadron and the fleet flagship to within about 1,500 meters. In a few seconds she was set on fire by our guns and sunk with terrific explosions four minutes after we opened fire.

By conservative estimate one armored cruiser, one small cruiser, and seven destroyers were sunk during the night and several small cruisers and destroyers were severely damaged. On our side the *Frauenlob*, *Pommern*, and *V–4* were lost; the *Rostock* and *Elbing* had to be abandoned and were blown up.

The *Lutzow* was kept afloat until 3.45 a. m. Towards the last the ship was steered by hand from astern. All attempts to check the inrush of water were unavailing. Finally there were 7,000 tons of water in the ship. The forecastle was under water up to the jackstaff. The ship had to be abandoned. The crew, including all the wounded, were taken over by the boats, and the *Lutzow* was sunk by a torpedo.

The four boats had on board altogether 1,250 men from the *Lutzow*. Twice they encountered enemy cruisers and destroyers, and both times attacked under the leadership of the senior commanding officer, Lieut. Britzen (Richard), and successfully cleared their way into the German Bight. In the last engagement *G–40* had her engines hit and had to be towed.

The Losses on Both Sides.

A careful estimate of the losses to the enemy as observed by us were:

	Tons.
1 dreadnaught of the *Queen Elizabeth* class	28,500
3 battle cruisers (*Queen Mary*, *Indefatigable*, *Invincible*)	63,000
4 armored cruisers (*Black Prince*, *Defence*, *Warrior*, and one of the *Cressy* class)	53,700
2 small cruisers	9,000
13 destroyers	15,000
Total	169,200

On Our Side Were Lost:

1 battle cruiser (*Lützow*)	26,700
1 old battleship (*Pommern*)	13,200
4 small cruisers (*Wiesbaden*, *Elbing*, *Rostock*, *Frauenlob*)	17,150
5 torpedoboats	3,680
Total	60,730

Conclusions.

Our success was due to the enthusiastic, efficient leadership by the subordinate officers, and the splendid work of the crews in which they displayed remarkable warlike spirit.

It was possible only because of the excellent quality of our ships and their weapons, *the intelligent drilling of our squadrons in peace times*, and the conscientious training of the individual ships.

The battle has proved that we have been guided by the correct strategical and tactical principles in the construction of our fleet and the development of the different types of ships. All arms contributed to the result. The decision, however, rested directly and indirectly with the long-range, heavy guns of the dreadnoughts.

The *dreadnought—battleship* and *cruiser*—is, and will remain, the foundation of sea power.

The Further Conduct of the War.

In conclusion, I beg to report to Your Majesty that by the middle of August the High Sea Fleet, with the exception of the *Derfinger* and the *Seydlitz*, will be ready for new encounters.

With good luck the enemy may be seriously injured in such operations as may then be carried out, but there can be no doubt that not even the most auspicious outcome of a naval battle will force England to make a peace in the present war.

A victorious conclusion of the war within a reasonable time can be attained only by crushing England's economic existence, that is to say, by use of the submarine against English commerce.

(Signed) SCHEER.

TO HIS MAJESTY THE KAISER AND KING.

SOVIET FLEET.

Source: Reliable.

(11520-B.)

17 November, 1920.

Fleet Personnel.

(*a*) The position as regards the fleet personnel is very bad.

(*b*) There are very few officers left, and those who have remained mostly occupy positions on the staff and ashore, chiefly in the general naval staff at Moscow.

(*c*) With very few exceptions all the sailors are very young.

(*d*) Sailors who formerly served on transports and even some men who have never been to sea before are now given rank and position in the fleet.

(*e*) Until recently there were no specialists whatsoever. The shortage of engineer mechanics was particularly noticeable.

(*f*) Many so-called specialists were obtained from the officers' training classes in the spring of this year, but none of them have any

practical experience. Many of them joined the classes in order to avoid for a short time at least service at sea or the possibility of being sent to fight as soldiers at the front.

Organization of Fleet Command.

(*a*) The admiral of the fleet, Raskolnikov, together with his staff (composing all departments, such as operations, organization, pilots, gunnery, mines, mechanical, and wireless), are on board the *Krechet*, which has been lying off Kronstadt during the summer and which it is proposed to move to Petrograd during the winter. The fleet staff has a commissar and an assistant.

(*b*) Raskolnikov, however, has complete control. The commissars are there only for purposes of counter-signature and control of the political activities of the staff. Each specialist acts on his own responsibility, and the signature of a commissar on every piece of paper is only a formality. Commissars never interfere in the work of any particular department.

Organization of Crews on Board.

(*a*) The officer in charge of a ship generally holds the rank of commander and has one commissar attached to him.

(*b*) The staff of officers depends on the class of ships, but generally there are first, second, and third assistants (who carry out the duties of chief officer and assistants, and specialists).

(*c*) The commander of a ship controls activities with the exception of political matters.

(*d*) Generally speaking, officers are not expected to do propaganda work or praise the Soviet authorities. They may be "Whites," but as long as they show no hostility, either verbal or otherwise, to the Soviet régime they are not troubled, and are regarded as incorrigible White Guard prisoners of war. They are expected to fulfill their service duties in accordance with their special qualifications.

(*e*) The whole of the personnel are subordinate to the commander. The commissar is expected to see that instructions given by the commander are promptly and efficiently carried out.

(*f*) There are no special laws laid down with regard to the duties of commissars; in this matter it all depends on the commander of the ship himself.

(*g*) The strictest discipline is maintained. Ship commanders have the right to hand offenders over to the military revolutionary tribunal. This generally means imprisonment or dispatch to the front. Uniform regulations and their enforcement are especially severe.

Raskolnikov does not spare the officers in disciplinary matters, and the officers in their turn keep a strong hold over the sailors. Crews are only allowed shore leave in strict rotation. General leave has been stopped altogether.

(*h*) As soon as Raskolnikov took over command all ships of the active fleet had orders to move into the roads. They are now anchored there and carry out maneuvers.

(*i*) In general, it may be said that everything possible has been done to increase the fighting capacity of the ships and to enforce discipline among the sailors.

(*j*) Naturally these measures have aroused the hostility of the crews. Fear of the Communists and Chekas, however, prevents the sailors from making open protests, but they complain bitterly among themselves that the present régime is far worse than that of the Czar. "For," they say, "not only do we go hungry but we are even chained down to an unlimited terror at sea, without any chance even of visiting our wives and children, whereas in former times we had a definite period to serve, after which we were free men."

(*k*) Ship and shore detachments have their "committees" (or groups) composed of ship Communists, and are under the presidency of the local commissars, who in their turn are directed by the Political Department (Politetgel) of the Central Political Administration. These "committees" hold secret meetings to which members of the crew are forbidden entrance, and at which the commissar hands out the instructions received from his superiors. The "committee" keep an eye on the crew, while the commissar keeps his eye on the commander and officers.

(*l*) A commissar has no hold over either the commander or officers. If he wishes to report any one of the latter, he does it to the commander. He can, however, refuse his signature to any particular document, in which case the conflict is decided upon by the next officer of higher rank, i. e., commander of a destroyer to the commanding officer of a division, etc.

(*m*) On his side the commissar renders a report weekly, giving particulars of the activities, conduct, morale, and even the thoughts (if possible) of each individual officer and of the crew in general.

(*n*) In the event of any important movement in the political sense, the special section of the Cheka is informed and takes the matter in hand.

(*o*) The crews are dissatisfied with:

1. Prevailing hunger.
2. Limitation of leave.
3. Introduction of such severe discipline.

The following true incident took place one day last spring on board the *Sevastopol*. The officers discovered in their dining saloon one morning the following note:

If the officers have forgotten Helsingfors and Kronstadt, it will be necessary for them to have their memories quickened.

(*p*) Both officers and men are afraid to express their opinions openly, for those guilty in this regard have been known to disappear immediately, leaving no trace.

(*q*) The number of Communists on board the ships varies. The largest percentage is on the *Petrapavlovsk*, where there are 150 Communists out of a total crew of 450 to 500. They are not, however, evenly distributed. On some ships there are more than others, but the general percentage may be stated to be 20 to 25 per cent. There are, of course, large numbers of sailor Communists scattered all over Soviet Russia.

(*r*) In regard to technical matters, the standard of naval crews is, still lower than that of the officers. Specialists are lacking. Such specialists as are actually available lack practical experience and in general may be said to be worthless. Good signalers are a rarity.

(*s*) The establishment of ships' crews is cut down to the minimum, especially on the large ships, such as the *Petropavlovsk*. The *Noviks* have crews of 100 to 110 men only.

(*t*) In conclusion it may be stated that the fighting capacity of the Baltic Fleet is very low, in view of the bad condition of the ships themselves, shortage of men, and the low standard of education of the crews. The large ships have been disarmed, and in case of necessity it would be almost impossible for them to be rearmed, as the guns in question have been dispatched to the fronts. The ships' engines and other machinery are also in poor condition, due mainly to the practice of the removal of parts from one ship to fit out another. Lack of materials and skilled workmen prevent the manufacture of new spare parts.

PROBABILITY OF COMPLETING THE CAPITAL SHIP PORTION OF 8-AND-8 PROGRAM BY THE END OF 1927. (JAPAN.)

Source: Reliable.

(7206)

24 December, 1920.

There are now but four building ways in Japan capable of accommodating capital ships, namely, Kure, Yokosuka, Mitsubishi (Nagasaki), and Kawasaki (Kobe). Under extreme pressure several other shipyards, such as Yokohama dockyard, Asano shipyard, and Mitsubishi, Kobe, could be equipped to build capital ships, but in all cases except Mitsubishi, Kobe, this would entail in addition to other incidental work, a considerable amount of dredging, installation of heavier cranes, and some larger machines, etc. At the same time there are so few laborers experienced in shipbuilding that if these yards devoted their attention to capital ship construction the smaller vessels essential to complete the fleet would necessarily be neglected.

Therefore as the smaller vessels are of equal if not greater importance to Japan, it will be assumed that the four building ways now in use will be the only ones used in major ship construction.

The progress made in building the *Nagato* and *Mutsu* should not be accepted as a standard or as Japan's best efforts. Many difficulties were encountered that can not reasonably be again expected for some years to come. During the period in question many new shipyards and other industries sprang up, drawing from navy yards and any previously established shipyards a considerable number of valuable and experienced shipbuilders and mechanics. At the same time the demand for unskilled labor was so great that the almost innumerable labor problems experienced by other nations were likewise experienced by Japan. In addition to the above it is unnecessary to explain the difficulty experienced by Japan in obtaining materials such as steel, etc.

All of the above drawbacks have now been eliminated except an adequate supply of steel, which should soon be forthcoming. Also the first large ships are either completed or well under way and valuable experience has thereby been gained.

The probabilities of the various yards would therefore seem to be as follows:

Built in drydock, armor in place when floated out of dock.

KURE.

	Laid down.	Launched.	Time.	Completed.	Total time.
Nagato (BB)	Aug., 1917	Nov., 1919	27 mos.	May, 1920	33 mos.
Akagi (CC)	Dec., 1920	Jan., 1923	25 mos.	July, 1923	31 mos.
Kii (or Owari) (BB)	Feb., 1923	Feb., 1925	24 mos.	Aug., 1925	30 mos.
Battleship No. 7	Mar., 1925	Mar., 1927	24 mos.	Sept., 1927	30 mos.

Total construction: Battleships, 3; battle cruisers, 1.

YOKOSUKA.

Mutsu (BB)	June, 1918	May, 1920	23 mos.	June, 1921	36 mos.
Amagi (CC)	Dec., 1920	Oct., 1922	22 mos.	Oct., 1923	34 mos.
Owari (or Kii) (BB)	Nov., 1922	Aug., 1924	21 mos.	Aug., 1925	33 mos.
Battleship No. 8	Sept., 1924	May, 1926	24 mos.	May, 1927	32 mos.

Total construction: Battleships, 3; battle cruisers, 1.

MITSUBISHI, NAGASAKI.

Tosa (BB)	Feb., 1920	Nov., 1921	21 mos.	Nov., 1922	33 mos.
Takao (CC)	Dec., 1921	Aug., 1923	20 mos.	Aug., 1924	32 mos.
Battle cruiser No. 5	Sept., 1923	May, 1925	20 mos.	May, 1926	32 mos.
Battle cruiser No. 7	June, 1925	Feb., 1927	20 mos.	Feb., 1928	32 mos.

Total construction: Battleships, 1; battle cruisers, 3.

KAWASAKI, KŌBE.

Kaga (BB)	July, 1920	May, 1922	22 mos.	May, 1923	34 mos.
Atago (CC)	June, 1922	Mar., 1924	21 mos.	Mar., 1925	33 mos.
Battle cruiser No. 6	Apr., 1924	Dec., 1925	20 mos.	Dec., 1926	32 mos.
Battle cruiser No. 8	Jan., 1926	Sept., 1927	20 mos.	(1)	

[1] 75 per cent completed Jan. 1, 1928.

Total construction: Battleships, 1; battle cruisers, 2¾.

From the above estimate the total capital ships available by January 1, 1928, will be:

Battleships:	Battle cruisers:
Nagato.	*Amagi.*
Mutsu.	*Akagi.*
Kaga.	*Atago.*
Tosa.	*Takao.*
Kii.	*No. 5.*
Owari.	*No. 6.*
No. 7.	*No. 7.*
No. 8.	*No. 8* (75 per cent completed).

NOTE.—Upon completion of *Kii*, *Owari*, *No. 7*, and *No. 8* battleships, the *Fuso*, *Yamashiro*, *Ise*, and *Hiuga* will be relegated to the second line. Upon completion of *No. 5*, *No. 6*, *No. 7*, and *No. 8* battle cruisers, the *Kongo*, *Hiyei*, *Haruna*, and *Kirishima* will be relegated to the second line. This results in a program of 12 battleships and 12 battle cruisers.

ARGENTINE NAVY, NOTES ON.

Source: Reliable.

(13383-A)

30 October, 1920.

Sea Fleet, First and Second Divisions.

Moreno.
Rivadavia.
Belgrano.
Garibaldi.
9 de Julio.

These divisions operated from Puerto Militar as a base at night firing and individual battle practice and divisional battle practice. On 5 October, while the *Belgrano* was doing night firing, she mistook the *9 de Julio's* bow for the target and hit it with a 6-inch shell (wounding 6 men; none fatally). Taking into account the form of night firing and the "on" and "off" method of using the searchlights to locate the target this is not surprising. On 10 October initial range 14,700 meters at a towing target (9 by 33 meters) for 12-inch guns and at a 5 by 8 drifting target (7,000 meters) for 6-inch guns; nine 12-inch hits out of 56 shots were made. Small target results not known. On the same day the *Belgrano*, firing the same form of practice but using 7,000 and 4,000 meters instead of the longer ranges, made six hits out of 35 shots on the big target. The next day the *Garibaldi* and the *9 de Julio* fired the same form of practice. Results said to have been good. On 15 October the *Rivadavia* which had just finished main turbine blading repairs went to sea on a post-repair trial and for four hours made 20 knots. She then fired her battle practice. On 25 October the *Rivadavia* and *Moreno* fired divisional practice along the lines of the Individual Practice Rules and are said to have done well on this their first practice of this kind. Next day the *Garibaldi*, *Belgrano*, and the *9 de Julio* fired their divisional practice and are said to have done well. The exercises for the year

are now over and the ships of the First and Second Divisions have returned to Puerto Militar and have given their crews special leave.

The *Catamarca, Cordoba,* and *Jujuy* operated with the sea fleet off Puerto Militar and took part during the early part of October in the night firings and later engaged in battle practice (guns).

The *Almirante Brown,* a gunnery training ship, was scheduled for target practice early part of November off Rio Santiago.

Events of Interest to the Navy.

The year's training of naval conscripts came to an end to all intents and purposes with the completion of battle target practice. This means that at the end of the year some 30 per cent of the enlisted strength of the Navy is replaced by new conscripts. There is no doubt but that the Army and the Navy perform notable service in transforming the uncouth talent conscripted into very presentable military men, thus bringing up the tone of the nation.

The Spanish cruiser *Reina Regente* arrived at Buenos Aires on 23 October, 1920, and was warmly received and the officers and crew much entertained. This vessel leaves at an early but undetermined date for Ushuaia and thence for Punta Arenas to take part in the celebration in the Straits of Magellan.

On 28 October, 1920, ex-Lieut. Commander Hans Pochhammer, formerly executive officer of one of the ships of von Spee's squadron, lectured before the German Club of Buenos Aires. He began his lecture with a description of Tsing Tau; then explained the cruise of the squadron in the Pacific; the cutting of the cable at Christmas Islands by the *Nuremberg;* the battle of Coronel, commenting on the fine target presented by the British against the sky background versus the comparative invisibility of the Germans against the high coast line of Chile; the entry and departure of the German ships at Valparaiso; the cruise around the Horn; the battle off the Falkland Islands; and the preservation of discipline among some 400 sailors while in the water prior to their rescue by the British. It is reported that Lieut. Commander Pochhammer has been retained by the Chilean Government and that he is in Buenos Aires awaiting a call.

H. M. S. *Dartsmouth* has finished her overhaul at Capetown. She rejoined the British Light Cruiser Division at Rio and is now at the Falklands, from whence she goes to Punta Arenas for the Straits of Magellan celebration.

The following officers of the Argentine Navy have been ordered to the Naval Commission in London, for a special course in radio at Paris: Lieut. (junior grade) Harold Cappus and Lieut. (junior grade) Enrique Piñero. The Argentine Navy retains this practice of sending their radio post-graduates to France; while all other officers for instruction go to our Navy.

The Naval and Military Academies will hereafter have an annual foot-ball match. An athletic week has been established at Puerto Militar for the Sea Fleet; during this week competitive athletic events are held and trophies awarded.

Commander Delamare, Brazilian Navy, in a *Macchi M. 9*, 300 horsepower, got as far as Rio Grande on his Rio-Buenos Aires flight. The flight has now been abandoned, due to injury to the machine.

The Army manœuvres by regiments and by divisions were carried out during October. Artillery fire controlled by aeroplanes was held, as was night artillery fire using searchlights borrowed from the Navy. The production of petroleum in the Government fields at Comodoro Rivadavia was 150,000 barrels during September. The minister of agriculture has announced that the developments contemplated may be expected to result in these fields furnishing 40 per cent of the fuel oil needs of the Republic by 1922.

The strike against the Mihanovich lines of river steamers (owned principally by the British Royal Mail interests) has now run for some nine months. Congress recently authorized the President to take over and run these lines; but to date no action other than survey has been taken. It is reported that 30 days' work will be required to get the river boats in shape.

It is announced that the Southern Railway, under agreement with the Pacific Railway, will undertake the completion of the railway line between Bahia Blanca and Carmen de Patagonia (some 150 kilometers of road, connecting the lower Rio Negro with Bahia Blanca, and opening up the southern tip of the Province of Buenos Aires.

The committee of appropriations of the House of Delegates has finished the second revision of the budget for 1921. So far as military expenses are concerned, the Army estimates are cut from 52 millions to 45 millions (pesos); and the Navy from 41 millions to 37 millions. These amounts are practically the same as last year's which, for the Navy, means but little more than maintenance money. The total appropriation carried by the budget is 483 million pesos, whereas Chili's new budget is said to be even smaller (49 million gold and 255 million pesos). The Buenos Aires papers favorable to the administration comment on the two budgets as a reassurance of peace and tranquility.

The agents for the Deutsch-Luxemburg Co., have notified the Argentine Government that the floating dock ordered built in Germany prior to the war for 304,000 pesos gold, delivered at Buenos Aires, is completed but can not be towed to Buenos Aires on account of lack of tugs. They have requested the Argentine Government to send ships for towing service.

On 4 October the crews of Italian ships in port, together with the stevadores, struck as a protest against the action of the Italian Government in arresting at Genoa the seamen who had seized the Russian steamer *Rodosto*. They resumed work when a telegram was received saying that the above-mentioned seamen had been released.

HOW GERMANY'S FLEET MUTINIED.—FIRST SPARK OF REVOLT.—EVENTS THAT LED TO REVOLUTION.

Source: "The Times."

15 November, 1920.

A carefully recorded impression of the mutiny in the German High Seas Fleet on 29 and 30 October, 1918, is published in the Deutsche Wehr. The author of it is Lieut. Commander Fikentscher, of the battleship *Thüringen*, who has related, with the minuteness of one accustomed to log-keeping, the events on board his ship.

He describes how, on the night of 29 October, the entire fleet lying in the Schillig road received the order to prepare for sea. In accordance with the usual practice, a boat was called away to fetch the secret orders from the flagship. This envisaged night operations with light vessels against that part of the British fleet which was operating on the Belgium coast, but, of course, this was not then known, to either officers or men in the *Thüringen*.

The boat crew did not respond to the summons, and it was with difficulty that the boat was got away. Next morning a great part of the crew refused to turn out, and remained in their hammocks. About 8 o'clock came the order to put to sea, but the crew refused to carry it out and shut themselves in the forward battery, where they began to sing. The commander then gave the order, "Muster by divisions" to be piped; even then the ship's company was only got to the deck by personal appeals and orders on the part of the officers.

In the circumstances the order to put to sea was postponed, thick weather being given as the ostensible reason. The day's duty was got through in an atmosphere of suspense, and when in the evening the order came to get ready for sea the mutiny broke out.

As though by agreement the men came streaming from all parts of the ship, gun crews, stokers, and below-deckers, to the forward battery, where they prepared to resist. Hawsers were cut through, the weighing of the anchors was rendered impossible, and the electric light was cut off so that order could not be restored. A grim, uncouth horde of men shut themselves up forward from the rest of the ship. The officers armed themselves and mounted guard over the aft part of the ship to protect vital parts against attack by the muti-

neers. At about 3 in the morning the chief of the squadron came aboard and had a conference with the captain. On the next day the crew, including the mutineers, sheepish and repentant, returned to duty.

The officers waited impatiently to see what steps would be taken by the authorities. After the midday meal the signal was given from the flagship to be ready for sea at a certain time. The order had hardly reached the captain when the mutineers again gathered in the forepart and barricaded themselves in the battery. All exits were then covered by the officers. At the same moment a steamer from Wilhelmshaven brought alongside a company of marines, old and tried men, and these men were at once posted about the ship. Then the captain with some of the officers threw open the doors leading to the fore battery and ordered the men to come up on deck.

His order was greeted with howls from the mutineers. Meanwhile, two torpedo boats had come alongside and brought the squadron chief on board. A third torpedo boat lay cleared for action, with guns loaded and the gun crews standing by, 200 yards away. A submarine also approached and prepared for action. Then on the battleship *Helgoland,* 500 yards from the *Thüringen,* the crew swarmed on deck, and turned the casemate guns on the submarine.

Finally, the order came to unload, and the dangerous moment passed. In one respect it was only apparently dangerous since the mutineers on the *Helgoland* had not a single shell. The *Thüringen's* mutineers next offered to negotiate with the captain, who demanded unconditional surrender. They refused, and the squadron issued the order: "Resistance will be broken by force." The after part was cleared and the torpedo boat received instructions where to put its shots into the ship.

At that moment a seaman who had remained loyal undertook to persuade the men to come on deck, to save bloodshed, and the order was countermanded while he tried. Ultimately, he succeeded. As the mutineers came on deck they were conducted by the marines to the Wilhelmshaven steamer. As they went they were loudly cheered by the crew of the *Helgoland,* who, however, took no further steps to rescue them.

Lieut. Commander Fikentscher comments on the weakness of the authorities. Three or four torpedoes into the ship that had forgotten its duty might have saved the whole fleet. The mutineers, with 150 men from the *Helgoland,* were taken to Wilhelmshaven and imprisoned. A week later they were running the revolution in Northwest Germany. The ships were got in hand again with new crews, but on 7 November the revolution broke out, and the loyal hands went over to the Soviet.

In a review of the German naval estimates now before the Reichstag, Admiral Hollweg gives, in the German Gazette, some details of the immediate program for the navy.

He states that the naval authorities intend to employ the personnel allowed by the peace treaty as follows: A flotilla of six torpedo boats will be manned for mine sweeping. As a preliminary the three light cruisers, the *Medusa*, the *Hamburg*, and the *Arcona*, and one ship of the line, the *Hanover*, will be put into commission. Coastal police troops will be garrisoned at Emden, Borkum, Geestemünde, Cuxhaven, Pillau, Swinemünde, and Wilhelmshaven.

JAPAN'S SIBERIAN POLICY.

Source: "Eastern Review."

(10213)

8 December, 1920.

One of the editorials of the December Toho Jiron (Eastern Review) comments on the Siberian policy of the Japanese Government under the heading: "Fearful shriek of Gen. Oi and the tragedy-comedy of a buffer state." Referring to the proclamation made by Commander Oi on 12 November before the representatives of Siberian Governments, the editor says:

The proclamation is a source of deep regret as it discloses the inferiority of Japanese soldiers in Siberia in ability and statesmanship to professional politicans at home.

It was those soldiers who dreamed of the annexation of Siberia and then limited their ambition to the regions lying east of Baikal. It was they who declared the permanent occupation of Saghalien and the Maritime Provinces and were compelled to take refuge in Vladivostok and the North Saghalien, abandoning Nikolaievsk and trembling at the Bolshevist invasion. The proclamation of Gen. Oi seems to say that the Japanese militarists are convinced of the good intention of Krasnoschikov that he would effect the unification of Siberian Governments by establishing a peaceful government faithful to the Japanese as well as take the responsibility on himself to create a buffer state in accordance with the Japanese Government. We can not help expressing our astonishment at the near-sightedness of the Japanese commander-in-chief. Those Japanese militarists are not awake to the facts that the Russian residents in Siberia are of the same stock as those in Europe and it is only natural that they would reach a speedy understanding with the Soviet adherents whenever the chance offers it, for our soldiers are firm believers in the creation of a buffer state in Siberia.

That certain Governments in Siberia are outposts of the Bolsheviks is certain. Lenin may well exchange congratulations on the success of Bolshevist intrigue with Krasnoschikov.

The establishment of a buffer state in Siberia is absurd. Are not Japan and Poland the buffer states for the Anglo-Saxon nations? Poland as a buffer state for England and France has been supported by them and Japan has provoked the hostility of Russians by unwittingly acting as a buffer state. So far as Japan does not realize her position, she will be a catspaw of America.

Gen. Oi's announcement that the Japanese Army would not admit any Communist in the regions where the Japanese force is stationed is nothing but the yelling of a mad dog, as the Japanese forces are too weak to drive out the adversary influence. There is

no other way for us but to evacuate our forces and secure the guarantee of the Soviet Government to protect the Japanese residents in Russia. The present state of Communist administration in Russia is no more than an emergency measure and we do not doubt that, when Russia recovers from her depressed state it will be the Bolsheviks themselves who will create a new form of community based on democracy. We do not fear the invasion of out-of-date communism, but it is a deplorable fact that we should fight with the hunger-stricken Russians and we should spend our national strength in the brutal struggle.

It is more urgent for us to rescue the population who are dying in Siberia for want of food. At present the Chinese in Siberia are carrying out reprisals for the wrong done by Russians in Manchuria before the Japanese war, while the Americans are abusing the Government of China and inveigling Russians in the name of justice.

The innocent residents in Siberia are suffering from lawlessness and destitution. It is high time for us to rise to defend those people from famine and poverty in the name of justice and humanity. The support for Seminov should be withdrawn; the ignorant policy of militarist special administration should at once be abolished and we must establish in Siberia such a policy as will grant the all-embracing protection to Russians, Koreans, and Chinese. This means our carrying out justice.

JAPAN'S DIPLOMATIC TROUBLES.

Source: "Osaka Asah."

(11399)

17 December, 1920.

The diplomacy of the Japanese Government has never been more ineffectual than now. It may be assumed that there are many questions pending at Kasumigaseki. Is this a pleasant phenomenon? It should also be pointed out that the freedom of the press is restricted in regard to almost all diplomatic questions. The authorities are given the privilege of giving a previous notice of embargo, and this privilege has never been more abused than now. Such a high-handed policy will eventually prejudice the diplomatic interests of the country, and this should be duly noted by the authorities.

The fact needs no illustration that Japan's diplomacy in China has been in an impasse since the twenty-one demands were made on China. The same is the case with Japan's policy in Siberia. It is true that the scope of the Japanese garrison in Siberia has been considerably narrowed for financial and other reasons, but thousands of troops are still unnecessarily left in the neighborhood of Vladivostok. They can not prevent the bolshevization of the Vladivostok government; they have only stimulated the ill-feeling of the Russians against Japan.

Even these questions alone require the undivided efforts of great statesmen, but the most difficult question from Japan's point of view is what should be done with regard to Anglo-Japanese relations. It is not too much to say that the renewal or otherwise of the Anglo-Japanese alliance is the most important diplomatic question to the Empire. It has formed the pivot of the country's diplomacy.

Whether it will be continued or not, in whatever manner, will show whether the future course of the Empire will be smooth or difficult. The fact that the alliance was continued for one year has given some hope to those who desire its renewal, but no favorable news has yet been received, and one is tempted to wonder whether it has not become difficult to arrive at an agreement relating to the terms of renewal. It may be even surmised that the British Government has expressed an intention that it shall not allow itself to be bound by the alliance in case of trouble between Japan and America. In the present state of affairs, the only menace to Japan is an aggressive America, and an alliance renewed on such terms would be of no practical benefit to us. It is an obstacle in the way of Anglo-Japanese friendship that the League Assembly has postponed decision on the mandatory rule of former German islands in the Pacific which were the object of cooperation between Japanese and British navies. It should be noted that the Japanese protest against the Australian mandatory rule of the former German islands south of the Equator and the American protest against the Japanese mandatory rule of the former German islands north of the Equator are calculated to cause a depression which will sooner or later visit our diplomatic quarters. As to questions pending between Japan and America no explanation is necessary. It is more proper to say that the prospect is becoming more and more gloomy than that there is any gleam of hope for settlement. It is an incontrovertible fact that all these questions are interrelated and are conspiring to make the position of the Empire difficult.

Are the present diplomatic authorities equal to the occasion? We hope that the rumor that the foreign minister is the least important of all the present members of the cabinet is unfounded.

Is the Government prepared to make the present diplomatic difficulties of the country known to the people so that they can share the woes of the authorities and take the consequences? We believe that the people are not afraid of facing a crisis. In the past they have endured all difficult positions. It should not be forgotten that the people to-day are not amenable to blind obedience.

WHITE AUSTRALIA POLICY.

Source: "Asian Review."

(12669)

26 November, 1920.

"The Australian people are staunch advocates of the policy of "Whitemanism." From the cabinet ministers down to the commonest laborers, all are unanimous, so far as the question of the prevention of the influx of the colored people is concerned. Appar-

ently in pursuance of this policy the Commonwealth representative at the Peace Conference opposed the racial equality proposal of Baron Makino."

"At the Geneva Conference of the League of Nations Australia is going to be represented by Mr. E. D. Million, minister for repatriation. Recently, speaking at a luncheon, he declared that a White Australia policy was as vital to Australia as the Monroe Doctrine was to America, and stated that he would convince the League delegates of the reasonableness of this policy."

"In these days of advanced civilization, if the Australian people want to pursue a policy befitting the medieval ages no Asiatics can have any objection, provided their right of adopting any counter measure which may seem to them to be absolutely necessary to protect their interests is conceded by the Australians."

"If we follow the lines of the argument of Mr. Million, we can say without fear of contradiction that "Asia for the Asiatics" doctrine is as necessary for the advancement of the prosperity and happiness of the Asians as the White Australia policy is imagined to be for the Australians."

"Asians will gladly refrain from setting their feet on the blessed soil of Australia and other white countries, provided the white men withdraw from Asia altogether. There should be reciprocity in every arrangement if it is to be a fair one. Are the whites willing to retire from Asia altogether? Are they ready to quit China, Indo-China, the Philippines, East Indies, Malay Peninsula, India, Persia, and the recently robbed territories of Turkey? Are they prepared to restore Africa to its rightful owners? If they are, the race and immigration problems will become easy of solution, and the antagonistic feelings and heart-burnings accrued therefrom will disappear. In such a case both peoples, the white and the colored, will be able to work out their own destiny in their own way without interference from the other. If, however, the whites, without giving up their loots, further insist on the monopoly of special privileges, then it is quite natural that the Asians should refuse to take such an attitude lying down."

"In the name of the blessings of the white civilization, Asia has been subjected to ceaseless persecution and prosecution. Abuses and insults have been continuously heaped on her. Obstacles have been deliberately placed in the way of her forward move. Her sons have been branded with racial inferiority and their just rights have been and are still being most ruthlessly trampled upon. The Asians are not a vindictive people. They are the inheritors of nobler feelings and higher virtues. Through countless centuries of physical, psychophysical, ethical and spiritual disciplines, they have brought their lower animal passions under greater control than the

Europeans, as a race, have been able to do. It was on account of the superior ethics of the Asians that they have all along suffered these indignities without retaliation or even protest."

"But the Occident's high-handedness has reached such a point as to drive the proverbial oriental patience to the end of its tether. If it breaks, if the latent brute in human being rises up, it will indeed be a day of great calamity for the world. And the whites alone will be to blame for the harrowing catastrophe which the rising of the brute in man will occasion. The remedy for the prevention of such a contingency lies in the hands of the whites. Instead of a selfish, aggressive, and bullying policy, if they follow a humanized and just one and recognize the rights of the colored people, they will be doing an immeasurable service to humanity."

CONCLUSIONS DRAWN FROM 22 PROBLEMS AND EXERCISES WITH SEAPLANES, SUBMARINES, SCOUT PATROLS, SUBMARINE CHASERS, AND GUNBOATS AT KEY WEST, FLA., DURING 1917–18.

Assumption.

1. That the atmosphere is similar to that at Key West.

2. That seaplane observers have had at least five hours' experience in observing the operations of submarines.

3. That the water is the clear blue water of the Tropics.

4. That the submarines are similar to those of the H and K classes, and are handled by experienced commanders in accordance with the usual tactics of our submarine force. These submarines have large, fixed periscopes and are unable to run submerged at a speed of less than 4 knots.

Conclusions.

The conclusions stated below have been actually proved in 22 maneuvers, which have been most carefully drawn up, carried out, and analyzed. The conclusions regarding seaplane observations are based on the opinions of a number of expert observers, several of whom have had at least 20 hours' experience in actually observing the operations of submarines.

1. Black paint has proved to be the most difficult to see on submarines submerged in tropical waters. War color and green paints were seen at depths of from 60 to 70 feet by gauge, while black paint was never seen at a depth greater than 40 feet.

2. Submarines painted black can be seen by seaplane observers at the following depths:

(*a*) 40 feet by gauge when at a lateral distance of less than 500 yards.

(*b*) 30 feet by gauge when at a lateral distance of less than 1,000 yards.

(*c*) 20 feet by gauge (periscope just under) at a lateral distance of 200 yards.

(*d*) There is only the remotest chance that a black submarine can be seen at 50 feet.

NOTE.—It is assumed that the observers are not looking toward the sun.

3. The condition of the sea has very little effect in searching for black submarines submerged.

4. The speed at which the submarine is running submerged has no effect upon the readiness with which it can be seen. Submarines running totally submerged leave no wake nor other disturbance on the water.

5. It is slightly more difficult to see submarines submerged in the dark blue water (where the sun is behind a cloud) than in the light blue water (upon which the sun is shining directly).

6. It is very difficult to observe from a seaplane when looking toward the sun unless the nicol prism is used by the observers.

7. The wakes made by the periscopes of submarines have been seen as follows:

(*a*) Wind force one—up to 6 miles.

(*b*) Wind force three—up to 4 miles.

(*c*) Wind force five—up to about $2\frac{1}{2}$ miles.

(*d*) Wind force seven—up to $1\frac{1}{2}$ miles.

NOTE.—Clear atmosphere is assumed.

8. Altitudes between 1,500 and 3,000 feet have proved most satisfactory for observation from seaplanes. Probably 2,000 feet is the best height under average conditions.

9. The vision from a seaplane in this vicinity at heights of 1,500 to 3,000 feet appears to be interfered with by mist and haze far more than vision from a ship. This makes it difficult for seaplane observers to pick up objects at long ranges. Due to this poor visibility it is not possible to pick up large ships at greater distances than about 15 to 20 miles under average atmospheric conditions at Key West.

NOTE.—Further experiments will be carried out to establish this point more accurately.

10. In addition to the poor visibility, observation from seaplanes is greatly hindered by clouds, especially when they are low.

11. No observations can be taken while in heavy rain.

12. Oil escaping from submarines has been seen by seaplane observers at distances as great as 8 miles with the wind force two, and 3 miles with the wind force four.

13. As none of the seaplanes used in the maneuvers have been fitted with radio, they have made vertical dives and loops to signal the presence of submarines. These signals have been seen by

observers in the convoy at 4 or 5 miles on a clear day and at 2 miles under very poor atmospheric conditions. Practically no signals have been missed, and the location of the submarine has always been indicated with sufficient accuracy for the convoy to avoid it by maneuvering.

14. An answering signal of a saluting gun on a surface craft can be seen at practically the same distance as the ship making the signal. It has frequently been seen with the greatest clearness at 5 miles.

15. When seaplanes were present, no submarines, under even the most favorable weather conditions, have succeeded in gaining a position from which a successful attack could be made on the convoy without its presence being repeatedly signaled by the planes.

16. On the gunboats representing transports, observers have been stationed at the following positions:

(*a*) In ports several feet above the water line.

(*b*) On deck—about 10 feet above the water line.

(*c*) On the bridge—15 to 20 feet above the water line.

(*d*) In lookout stations aloft—about 70 feet.

These have obtained the following results:

(*a*) Lookouts at ports have not obtained satisfactory results, due to the motion of the ship and the interference of waves with their vision.

(*b* and *c*) Lookouts on deck and on the bridge have been very successful in picking up the periscopes against the sky line. On one day, with a wind force five, periscopes were seen at 6,000 yards when exposed continuously. On another day, with wind force three–four, periscopes were seen at 10,000 yards and 7,000 yards.

(*d*) Lookouts in the lookout stations aloft have usually picked up the wakes made by the periscopes before seeing the periscopes themselves.

17. With wind force one, the lookouts on the vessels of the convoy have been able to sight submarines in sufficient time to avoid their attack.

With wind force three, lookouts have an even chance of picking up periscopes in time to avoid attack.

With wind force five, lookouts have little chance of picking up periscopes in time to avoid attack.

Note.—It is assumed that a large number of properly trained lookouts are stationed on deck, on the bridge, and in the lookout stations.

18. Submarines making the approach in the sun glare have little chance of being picked up by lookouts on ships in any condition of the sea unless the observers use the nicol prism.

19. Due to their slow speed and their unseaworthiness in moderate weather, the small scout patrol vessels have been of little assistance in repelling submarine attack, except in calm weather.

20. Very good work has been accomplished by the submarine chasers which have acted as the escort in recent maneuvers. They

have been able to keep in position in a moderate sea and have picked up submarines in a way which compares favorably with work of the gunboats. They have proved of great assistance in repelling submarine attack.

21. Messages have been dropped from seaplanes in a wooden container on Sand Key and near lighthouses and ships. This is a satisfactory method of communication if only small distances need be covered.

MAIZURU NAVY YARD.

Source: Reliable.

(6798)

24 December, 1920.

No improvements have been made to the yard, buildings, or equipment for some years. The location of the yard, and the character of the surrounding terrain is such that any considerable expansion is impossible. The shops are frame, with sheet-iron sides. They are in bad condition and have the appearance of temporary structures. They are extremely badly arranged inside, and are dirty and apparently run in a slipshod fashion. This lack of effort to maintain military discipline among the yard workmen was most pronounced. Yet it is said that the workmen's spirit was better here than at any other yard in Japan, and that the destroyers built at Maizuru are, and always have been, the best built in Japan, while those built by the Kawasaki Co. (where the men are the highest paid in Japan) are the worst.

Several reasons can be assigned for the good spirit and workmanship at Maizuru. First, it is a small provincial town in which there is no industry other than the navy yard. Second, the first consideration in employing workmen is not their mechanical ability, but whether their fathers and grandfathers are working in the yard. Third, only one type of vessel is constructed here. There are about 7,000 workmen employed in the yard.

Maizuru is well situated for the building of light crusiers, destroyers, and submarines, and there is some talk of eventually building a light cruiser here, but it is doubtful if this will be attempted, for to do so would necessitate new shop installation and a remodeling of the yard, including the installation of a complete new set of cranes. The status of destroyer construction is as follows:

Shimakaze, 99 per cent completed.

Nadakaze, 50 per cent completed.

Shiokaze, 30 per cent completed. (Recently launched) 13 November.

Tachikaze, 5 per cent completed.

Hokaze, to be laid down 30 November, as soon as ways recently cleared by *Shiokaze* are prepared.

The third and largest building way is not now and has not for some time been used. This is undoubtedly due to the yard being too small and poorly equipped to undertake more work.

The *Shimakaze* on her acceptance trial made 41 knots, and developed 40,000 brake horsepower. This is the highest speed ever made by a Japanese destroyer. The other destroyers built by this yard have made between 37.5 and 39.5 knots on their acceptance trials. These trials are held in light condition and before battery is installed.

All Maizuru-built destroyers are equipped with Brown-Curtis turbines and reduction gear. No cruising turbines are used.

All destroyers are fitted with deck mine tracks, and also for mine sweeping. The mine-sweeping gear is identical with that supplied our own destroyers.

Fuel capacities are reported as follows: 1,345 ton (—kaze class), about 315 tons; 835 ton class, about 290 tons. Oil fuel is used exclusively in all later destroyers.

Reduction gears and the larger castings, such as turbine casings, are made at some other place and shipped to Maizuru. However, most of the other machinery used in destroyers is built there. This includes boilers, blowers, turbine motors, pumps, and other auxiliaries.

Ordnance.

There is a rather large torpedo repair shop which contained about 60 old torpedoes, both 18 inch and 21 inch, being overhauled and repaired. It is said that in addition to other probable troubles, almost without exception these torpedoes had leaky bulkheads, and in numerous cases, instead of grinding in a new seat, soft solder was being used to stop the leak. The only torpedo material being manufactured here was war heads, exercise heads, and afterbodies for both 18-inch and 21-inch torpedoes. There were only a few afterbodies visible, but about 250 heads were scattered over the shop and were all in the early stages of completion.

Another shop was devoted to the manufacture and assembling of 4.7-inch and 5.5-inch gun mounts, sleeves, and sight yokes. There were about 40 of these mounts in the shop in various stages of completion. They are for light cruisers and destroyers. The guns and breech plugs for these mounts are made at Kure. The sight yokes seemed rather complicated, and probably subject to considerable lost motion due to numerous sets of gears, despite the statement of an officer in this shop to the contrary. The range and deflection dials (deflection drums are not used) are unusually large and very distinctly marked. Deflection dials are graduated from zero to 40.

JAPANESE SHIPPING SITUATION.

Source: Reliable.

(11614)

24 December, 1920.

Japanese shipowners are beginning to feel acutely the competition of American shipping on the Pacific. Although during the war there was more cargo than could be carried by the ships available, there is now, with the existing depression, a great decrease in cargoes, and at the same time the tonnage offered in consequence of the allocation to the Pacific of several hundred thousand tons of American Shipping Board vessels has greatly increased. The competition that has ensued has resulted in a sharp cutting of freight rates, which has made it difficult for many of the smaller companies to continue operations.

Under these circumstances, it is natural that the Jones Shipping Act should have aroused widespread apprehension and discussion. During July the Tokyo Chamber of Commerce arranged for a general meeting of representatives of all the chambers of commerce in Japan to formulate a protest against the bill. Among commercial bodies the view was taken that the new shipping policy of the United States would seriously affect the carrying trade of Japan, and that since the whole country would suffer from this, a nation-wide movement should be inaugurated to oppose the law. The chambers of commerce expect the cooperation of various exporters' guilds and other commercial organizations

The depression in shipbuilding is now very pronounced. During July and August the total tonnage of vessels of over 1,000 tons launched was less than 50,000 tons. While the figures for September have not yet been announced a further shrinkage is expected. Some of the smaller shipbuilding companies have gone out of business and their plants have been scrapped. Larger companies like the Kawasaki, however, still manage to do well, as they can count on getting orders from the navy department.

The financial and economic advisory council, which was established this year by the Government, has outlined a shipbuilding policy, in which it suggested that direct protection to shipbuilders was unwise, but that indirect protection should be granted in the way of removing import duties on materials and equipment, the continuation of the levying of import duties on vessels, the development of credit facilities to builders and the establishment of a shipbuilding laboratory. It was, however, deemed necessary in the case of superior and special vessels to subsidize both the cost of building and the expense of navigating in ordinary times.

Owing to the practice of Japanese shippers of cutting freight rates below the schedules agreed upon by the Pacific Freight Conference,

the United States Shipping Board Conference began a series of informal meetings with representatives of other shipping interests with a view to bringing about an honest adherence to the rates agreed upon. From the first, however, it was apparent that an inviolable rate agreement would be difficult to arrive at. Not only did the companies fail to take an active interest in the matter, but those attending the conferences would not agree upon a definite schedule of rates.

COMBAT—JAPAN.

Source: Reliable.

10 December, 1920.

The following clipping, which is quoted from an article by the Times correspondent in Tokyo, is published as being of interest to the service.

Peace (e) Naval Policy—Japan's Naval Aims.

"This morning I had an interesting talk with Admiral Baron Kato, the veteran minister of the navy, who for nearly six years has been in charge of naval affairs during the Okuma, Terauchi, and Hara cabinets. Baron Kato expressed himself, as he has often before in and out of the Diet, to the effect that Japan has one policy which it has consistently followed for the past 20 years, and would continue the same whatever might be the changes in the policies of the other powers.

"Your correspondent hereupon ventured the opinion that it might seem strange that, whereas the situation in the Pacific had completely changed during the last few years, Japan's policy should remain unchanged. The minister, however, persisted in saying that the national policy had no aggressive designs and no other aim than the defense of the Empire.

"The newspapers here and abroad seem to be impressed with the large figures of the naval budget, and in this connection Baron Kato pointed out that owing to the increase in prices their expenditures were 150,000,000 yen (£22,500,000) in excess of the normal, and that the huge budget did not mean naval expansion but simply increased costs.

"The minister assumed a modest tone when reminded that critics in America and elsewhere saw in the budget plans of Japanese ambition to equal, if not excel, the naval forces of its most likely future rival. He smiled and said that Japan was unable, for financial and technical reasons, to equal the achievements of the leading maritime powers.

"She was contented with fewer vessels, but aimed at the ideal that her capital ships should equal ship for ship those of the other powers; hence the construction of the largest type of battleships. It must be remembered, however, that Japan was not so advanced

in shipbuilding, and, while the biggest ships might be larger, they had only the same fighting qualities technically. Moreover, it must be remembered that Japan could not build more than eight so-called capital ships authorized in the last regular Diet, and whatever other countries might expend, Japan could not go beyond the authorized program. The minister further emphasized Japan's weakness in auxiliary forces, comparatively speaking, which, he said, should clearly be understood when the estimate was made of relative strength.

"The minister, who was asked to state the naval policy in the simplest words, answered that it was very hard to do so beyond reaffirming what he had already said. In regard to the regions in which Japan had mandatory powers they in no way affected the scheme of national defense. There were no naval bases and no need to enter a naval race with any other power in a spirit of competition. Finally, Baron Kato said that everywhere armaments would, he hoped, be reduced, in which case Japan's naval strength would be correspondingly changed, but her naval policy would remain unchanged."

COMBAT—ENGLAND—WAR PLANS.

Source: Reliable. (13908) **30 November, 1920.**

War Plans.

The following principles and policies as expressed in "The Future of the Empire," by J. Saxon Mills, are believed to be of interest to the service.

The future of the British Empire depends upon sea power and the essential conditions of sea power are *concentration*, cooperation, and *unity of control*. There must be no "baby navies" in the colonies. The two departments for which some central council of the empire is required are foreign relations and naval defense.

The primary object of the British Navy is not to *defend anything* but to attack the fleets of the enemy, and, by defeating them to afford protection to British colonies, shipping, and commerce. The traditional rôle of the British Navy is not to act on the defensive but to attack the force that threatens - in other words, *assume the offensive*.

Mr. Winston Churchill states in a few words England's policy as follows:

> The more the problem of Imperial Naval defense is studied, the clearer it will become that there is only one solution. Each section of the empire must develop its own defensive machinery against raids and incidental interference with commerce. But more important than such localized effort is the absolute necessity of combining to build battle fleets to command the sea. The command of the sea—the ability to control the communications of the empire—must be ours.

The share of the Dominions in the duty of naval defense would fall into three parts. First, There must be developed in Canadian, Aus-

tralian, and South African waters a naval establishment with docks, defenses, and repairing plants. Second, the Dominions must supply themselves with destroyers and submarines. Third, they must contribute battle cruisers and scout cruisers to the Imperial Fleet.

The question of military defense of the empire depends upon a wholly different set of principles. British armies are supplementary to naval power. Another important difference is that standardization, uniformity of training and equipment are not as essential in the composition of an army as in the composition of a fleet. Those who insist most strongly upon individual control of the empire's naval forces and the need for an empire council dealing with naval defense insist on the independence and autonomy of the Dominions in the recruiting and management of their own internal military resources.

VIEWS OF PROMINENT AUSTRALIAN BUSINESS MAN REGARDING THE UNITED STATES IN THE MATTER OF FINANCES, ETC.

Source: Reliable. (12419)

22 December, 1920.

Recently a well known business man who seemed to be distressed regarding financial matters in this country expressed regret that the United States had not "performed its full duty" in the adjustment of international conditions. He is considered among the leading Australian business men who are quite favorable to Americans and American interests, but in this instance he seemed to feel somewhat antagonistic, alleging that America was "slow to get into the war" and after it did participate in the great struggle "it failed to assume its full responsibilities" in carrying the world's burden of financial trouble. He referred to exchange conditions and seemed to feel that the United States should take a hand in bearing a proportionate share of the world's financial losses growing out of the war. Asked how this could be accomplished he seemed to feel that America should ascertain the world's losses in connection with the war and then contribute thereto a proportionate share of its gains resulting during and after the war.

This may be accepted as a most remarkable statement coming from such a prominent industrial leader. His and other statements seem to indicate that as financial conditions in Australia become more aggravating more and more blame will be placed at the door of the United States, based, apparently, on the fact that the United States "made money out of the war," while other countries were "financially bled white" because of the war.

It would seem that those who agree with him assume that inasmuch as the World War was waged by the Allies for the crushing of Prussianism, all the countries that benefited thereby should contribute

proportionately in bearing the allied financial losses incurred in carrying the war to a successful conclusion.

In any event, Australians are generally unhappy because of the financial conditions existing there. There seems to be a feeling of resentment against Americans because of the financial strength of their country as compared with the financial weakness of other countries. Australians as a rule continue loyal to the British Empire and for that reason it has seemed desirable to avoid any public activity in so far as Americans are concerned in endeavoring to arrange American banking and other procedure through American interests, that could in any way be construed as interfering with or opposing the established British-Australian procedure, operating through London as the financial hub of the world. However, if American banking connections were established in Australia it is believed that Australian business men engaged in American trade would be found ready to cooperate in a practical sense.

JAPAN TO BUILD ITS OWN WARSHIPS.

Source: "Japan Advertiser" of 16 December, 1920.

(7206–B.)

16 December, 1920.

"The report that Japan has ordered a number of warships from Vickers is denied by Admiral Okada, chief of naval construction at the Saseho Naval Station."

"The rumor that Japan has ordered warships from England," he said, "is perhaps due to doubt regarding the shipbuilding capacity of this country in regard to the eight-battleship and eight-battle-cruiser program. People seemed to think that Japan would not be able to build all the warships required, and thus assume that orders have been placed with England."

Cost Now Low in England.

"It is not impossible that we may order special ships in order to initiate ourselves into some special technique in naval construction, but we need no outside help to build ships under the eight-and-eight program. The situation would be different if the cost of construction were very low in England, but this is not the case. Japanese industries are now suffering seriously from the financial depression and, if only for the purpose of relieving industrial difficulties, orders will not be sent to foreign countries."

"A second-class cruiser and a first-class destroyer were launched at the Nagasaki shipyard on 14 December. The cruiser was christened the *Kiso*. She has a displacement of 5,500 tons and a speed of 33 knots (?). Her battery consists of seven principal and two

auxiliary guns. The destroyer, named the *Akikaze*, displaces 1,350 tons and has a speed of 37 knots. She has four 12-mm. guns and six torpedo tubes."

To Carry Most Powerful Batteries.

Reports from Kure state that work has been commenced on the construction of the battleship *Akagi*. A ceremony celebrating the beginning of work was held 7 December.

According to the Japanese papers, work will be started on the battleship *Amagi*, a sister ship of the *Akagi*, this Thursday at the yard belonging to the Yokosuka naval arsenal. The battleships *Akagi and Amagi* will each displace 40,000 tons and will carry the most powerful batteries of any Japanese warships.

The building of the seaplane tender *Hosho* will be commenced this week at the Asano shipbuilding yard in Tsurumi for the Yokosuka Naval Arsenal. The *Hosho*, with a displacement of 21,000 tons, (?) will be built in the most up-to-date design. Construction is expected to be completed within the next year.

JAPANESE AND AMERICAN ARMAMENTS.

Source: Article in "Osaka Mainichi."

(4932.)

15 December, 1920.

"Mr. Kahn spoke as if the extension of armaments were the best means of preventing war between Japan and America. No collision occurs unless there is a cause, and if this cause is not removed, no extension of armaments can prevent a clash. On the contrary, if armaments are extended without any efforts being made to eliminate the source of trouble, antagonism will be stimulated and will lead to war, as was evidenced by the European war. If the Americans are really desirous of promoting Japanese-American friendship, they should return to the principle of justice and humanity which they themselves have advocated and make efforts to eliminate the source of trouble. This is the first need of the situation. Secondly, the two countries should carry out disarmament as proof of their determination to settle disputes by means other than armed force. Of late America has been steadily extending her armaments both on land and sea, and this has created a bad impression among all classes of people in this country, who wonder if America has not changed from the principle of justice and humanity to that of armed oppression. In these days writers should be specially cautious, but it is regrettable that some cheap self-styled patriots should often try to inflame the feeling of the two peoples, and that such utterances should be made an excuse for the extension of armaments."

"In this connection we may profitably remind ourselves of the proposal of President Monroe a century ago regarding the restriction

of naval power in the lakes on the northern American frontiers. This proposal materialized, and this had a conspicuously salutary effect on the minds of Britons and Americans. There are neither warships, nor forts, nor big guns, nor even guards along the American-Canadian frontiers. When this is compared with the circumstances which attended the European war, it will be seen how fallacious is Mr. Kahn's plea that armament expansion is the best means of preventing war between Japan and America, not to mention the preposterous utterance that the responsibility for a Japanese-American war would rest with Japan. Is it becoming of a representative of the people to say such a thing? In most cases both sides are responsible for a collision, and the responsibility is by no means one-sided. In the majority of cases such a collision is due to misunderstandings which can not be removed by a cheap bluff. Let us point out that the obstacles in the way of Japanese-American friendship are such bluffs of agitators and the armament expansion in America. We commend this to the good attention of intelligent Americans."

"WHITE AUSTRALIA" TO BE ENFORCED IN FORMER GERMAN POSSESSIONS IN SOUTH SEAS.

Source: Article in "Kokumin."

15 December, 1920.

"Japan is demanding of the League of Nations the rejection of the application of the 'White Australia' principle to the former German islands under the Australian mandate. The Australian law is designed to deprive the Japanese in those islands of all their vested rights, and Japan maintains that this is subversive of the spirit of the League of Nations based on justice. In other words, Japan is opposed to the extension of anti-Japanism in Australia to the former German islands. The attitude of Australia toward the League neither increase nor decreses its authority. If Great Britain is afraid of internal dissension she can only persuade Australia. On the other hand, the authority of the League will completely disappear if it openly recognizes the application of the anti-Japanese law of Australia which is similar to and even more serious than the Californian law, a law which even the American Government denounces as contrary to the sense of justice and to the spirit of American laws."

"It is wrong to regard Japan's claim as a demand for the opening of the islands under the Australian mandate, for she is only concerned with the preservation of her vested rights. We can not understand the attitude of Australian characterizing it as a preliminary to the introduction of the race equality proposal or as a modification of this claim."

"The proposal of the Allied Military Commission regarding disarmament is excellent as a matter of ideal, but in the present state

of the international situation there is practically no hope for the realization of the recommendation."

"The statement of Viscount Ishii that Japan can not carry out disarmament in the present state of affairs is quite right. The strong powers outside the League of Nations are actively expanding their armaments, and they are apt to try to encroach upon the spheres of other countries. Supposing Japan lacked the means of self-defense and were subject to the pressure of other powers, what would be the result?"

BOLSHEVIKS IN JAPAN.

Source: Reliable.

(11556.)

The centers of Bolshevist propaganda in Japan are at Osaka and Niigata, but they have connections in Kobe, Tokyo, and all the industrial cities of Japan.

The principal agents of the propaganda are, first, the Russian Jews who have inundated Japan during the past two years. They are small merchants, commission men, money lenders, chauffeurs, and workmen. Their principal headquarters is the Russian restaurant in Yokohama (No. 106 Yamashita-cho), the proprietor being a Russian Jew with a Japanese wife.

Besides the Jews, the agents are, first, Koreans, who are discontented with Japanese domination of Korea; second, Chinese, who resent Japanese action in Manchuria, and although they are nationalistic in spirit, are in constant touch with the Russian propagandists from Siberia, who are also well known in Peking.

Japanese Bolshevists: Dr. K. Kato, who was recently arrested in Osaka with several of his followers; Mr. Kuwada, a theorist of Tokyo; the railroad mechanics at Niigata are pure Bolshevists.

The Japanese Bolshevists have planned a big conference in Tokyo during the latter part of December under the guise of Socialists and intend to deliver certain ultimatums to the Government which, if not granted, will result in a general strike. They are awaiting also the arrival of some 20 Russians, Bolshevists, some of whom are coming from Habarovsk via Saghalien and some from Petrograd via Holland.

There is at present in Yokohama a Russian Jewess, about 25 years of age, who is apparently a Bolshevist agent. She often visits the Russian restaurant at No. 106 Yamashita-cho, and goes under three names: Madam Alexander; Goldman; Lifshitz. She does not hesitate to say that the time for the Bolshevist régime throughout the world has arrived and is the only system worthy of the future of the world. She is beautiful, spends much money, and is without known means of support.

ITEMS OF GENERAL INTEREST.

Source: Reliable.

(12925-A)

26 November, 1920.

Next spring Japan will receive a giant Zeppelin, as large as the cruisers *Kongo* or *Haruna*. It is a part of the Empire's award of captured German material. It is of the latest model and just being completed.

According to the Yamato, H. I. H. the Crown Prince will go abroad next March. His Highness proposes to visit Europe. The decision that he should go abroad was made at a conference of the elder statesmen, but it will be necessary to have the imperial sanction. The Crown Prince will travel incognito as count of the realm.

The British transport *Frankfurt* arrived at Nagasaki, en route from Hamburg to Vladivostock with 1,490 Russian prisoners of war from Germany. Another steamer carrying Russians proceeded from Singapore to Vladivostok direct. The vessel will probably call at Nagasaki on the return journey with German prisoners from Siberia.

The big naval tanker *Sata*, displacing 11,000 tons, will be launched from the Yokohama dockyard on the 28th instant.

More than ¥500,000,000 will be asked by the navy department for next year, ¥170,000,000 for running expenses and ¥340,000,000 for extension work. The department of finance has requested that naval appropriations be cut to the quick.

NEW BATTLESHIPS (GREAT BRITAIN).

Source: "The Daily Mail."

(12093)

14 December, 1920.

"The prime minister announced in the House of Commons yesterday that the committee of imperial defense will meet to-day to begin its investigation of the future needs of the navy in regard to capital ships (battleships and battle cruisers) and of the best methods of defense of the country."

"The situation is that the Admiralty has asked for a program of capital ships to be laid down next year and that the cabinet has decided that an exhaustive inquiry into the value of the battleship must be held before any measures are taken."

"The inquiry will be conducted by the committee of imperial defense itself, and not by a subcommittee of experts appointed by

it. It will be at the discretion of the Admiralty to summon any assistance required, and the committee will be empowered to call for all the expert evidence available."

"The basic fact remains that the committee is not qualified to conduct such an inquiry. It includes a majority of laymen, who know nothing of naval war or naval construction. Among its members are Lord Curzon, Lord Milner, Mr. Chamberlain, Mr. Churchill, Mr. Montagu, Mr. Bonar Law, and Mr. Balfour, with Field Marshal Sir Henry Wilson, who is no authority on naval affairs. Sir H. Trenchard represents the Air Force, and Mr. Long and Lord Beatty the Navy."

KURE NAVAL STATION DAMAGED BY STORM.

Source: Reliable.

(6799)

24 December, 1920.

1. On 9 December a sudden and violent storm did a great deal of damage to the Kure Naval Station.

2. The destroyers *Isonami* and *Ayonami* were torn from their moorings and driven ashore on the breakwater. The naval tug *Eiraku* foundered.

3. Some thirty-odd craft of various descriptions, nearly all loaded with coal or iron, were sunk by the wind and sea.

4. The very heavy sea washed away the breakwater that protects the inner harbor and also a number of water-front cranes.

5. The washing away of several hundred feet of the breakwater caused a landslide at the sea end of the gunshed and several 12-inch guns in that end of the shed slid into the water. Six big wharves and ten smaller piers were damaged by the waves, the former being put out of commission.

6. The damage to the breakwater, cranes, and workshops, including a wire-rope factory under construction, is estimated at about 500,000 yen.

AUSTRIAN AND GERMAN SHIPS CEDED TO ITALY.

Source: Reliable.

(13688)

13 October, 1920.

The following ships ceded to Italy have been officially entered in the Italian war marine:

Austrian scout *Helgoland* now *Brindisi.*
Austrian scout *Saida* now *Venezia.*
German scout *Strassburg* now *Taranto:*
German scout *Pillau* now *Bari.*
German scout *B–97* now *Cesare Rossarol.*
German destroyer *S–63* now *Ardimentoso.*
Austrian tug *Hercules* now *Teseo.*

ARGENTINE NAVY: LONG RANGE BATTLE PRACTICE, INDIVIDUAL; STANDING IN.

Source: Reliable.

(1238)

22 December, 1920.

The ministry of marine has published the following standing and multiples:

Battleship *Moreno*	208.33
Armored cruiser *Belgrano*	207.24
Armored cruiser *Garibaldi*	126.98
Armored cruiser *9 de Julio*	117.83

JAPAN: FORTIFICATIONS, BONIN ISLANDS.

Source: "Press."

(1182)

11 November, 1920.

"The minister of war at Tokyo denies that the fortifications in the Bonin Islands have been begun because of a recently created necessity. He also states that the plans have been in existence for some years, and that it is possible to put them into execution now because of appropriations recently available."

JAPANESE DESTROYERS STRICKEN FROM NAVY LIST.

Source: Reliable.

(2154)

24 December, 1920.

The following coast destroyers of the Japanese Navy—*Akebono* and *Oboro*—were stricken from the navy list as of 1 December, 1920.

AVIATION.

AVIATION IN JAPAN—NAVAL, MILITARY, AND CIVILIAN.

Source: M. I. D.

(9318.)

18 November, 1920.

Personnel.

The air service, in general, consists of pilots, officers, and enlisted men belonging to organized battalions, and civilians and mechanics employed at the various shops and arsenals.

There are at present (October, 1920) 250 to 300 qualified military pilots. The number of pilots and observers however is being steadily increased as the result of the schools established by the recent French Air Mission.

Pilots are drawn from both officers and noncommissioned officers, the latter being little, if any, inferior to the former.

Mechanics are drawn from enlisted men and civilians, the latter being almost exclusively employed in manufacture and repair of planes and motors. It has been almost conclusively established that many German mechanics are now being employed in the manufacture of motors. Fifteen privates have been chosen from each air battalion and sent to Tokorozawa for instruction as mechanics. If this venture is successful, the number will be increased in the future.

A number of fliers and mechanics are sent abroad yearly for instruction.

There are three boards (or bureaus) that have to do with aviation, in the war department.

1. The air bureau (Koku Hombu), which deals with training, instruction, construction, and all technical matters. This bureau is under a major general assisted by a colonel.

2. The aviation section of the war department, which deals with administration under a colonel.

3. The air board, consisting of a mixed body of army officers and civilians, which deals with aeronautics in general, both military and civil, general subject of production, air routes, aerial regulations, etc. This board is under the vice minister of war.

The air service is not yet a separate corps with its own commissions, but indications are that it will be in the near future. At present officers are detailed to the air service from other branches of the service.

Maj. Gen. Inoue, who is the head of the air bureau in the war department, is the chief figure in Japanese flying.

Maj. Gen. Arikawa, engineer, is looked upon as a future director of military aviation. He was educated in Germany.

Maj. Gen. Hata, general staff, assistant to the vice minister of war on the air board. He has long been on duty in the general staff headquarters, and is a very capable officer.

Col. Sasamoto, engineer, in charge of motor manufacture in Kiki Arsenal, Nagoya. This officer was in the Creusot Works for several years, as well as in American factories. He is the leading authority on motor manufacture in Japan.

The leading fliers in the army are: Maj. Nakanishi, Capt. Takeda, Capt. Abe, and Capt. Ozawa.

The leading balloon men are Lieut. Col. Masuda, Maj. Harada, and Capt. Yamase.

Lieut. Gen. Nagaoka, retired, is deeply interested in civilian aviation, although he is a persona non grata to the civilian element in the Imperial Aviation Society.

The present French Air Mission consists of one lieutenant, pilot instructor, and two civilian mechanicians. This is what remains of the original mission of 22 officers and 30 noncommissioned officers.

An English Naval Air Mission, consisting of about 30 officers is expected to arrive in Japan in the spring of 1921.

There are 250 to 300 qualified pilots in army aviation; about 30 per annum graduate from the Flight School at Tokorozawa.

Militia flying is represented by a small detachment of Formosan police, who received their training at Tokorozawa. These police are trained on the Farman and Nakajima planes, for service against hostile natives. They have been used to some extent in both reconnaissance and bombing.

There are no trained military reserves.

There are from 8 to 10 commercial fliers who would be of some value in case of war. Of these only two—Oguri and Goto—can be rated as good pilots.

Civilian Aviation.

The supplementary budget for 1920 provides for the training of 10 civilians yearly at army flying schools, to start December, 1920. There have already been many applicants for these places.

A "board of air" under the control of the war minister has just been established (August, 1920) for the control, guidance, protection, and encouragement of civilian aviation. This board has both civilian and military members, its president being the vice minister of war.

The Imperial Aviation Society is the principal civilian agency for the encouragement of civilian aviation. It has a large amount of money at its disposal, the Emperor alone having donated one-half

million yen. It has promoted several flying events open to civilian aviators only, such as the Tokyo-Osaka nonstop flight, competition mail route flight, and prizes for speed and altitude. Due largely perhaps to internal dissension its efforts have not been very successful, although liberal prizes have been given in all its events. It is also engaged in active propaganda among the people.

The second aerial mail contest will take place in November, 1920, under the auspices of the Imperial Aviation Society. The first prize will be ¥12,000, the second prize ¥9,000. The army aviation bureau donates ¥7,000 of the above sum. In addition, the army air bureau, on 1 October, 1920, donated ¥30,000 to the Imperial Aviation Society for the encouragement of civil aviators and civil aviation. As civil aviation has been a failure largely on account of poor machines, a number of those obtained from Germany on account of war indemnity will be turned over to civilian aviators.

In general, it may be said that civilian aviation up to the present time has made but little progress, nor can much be expected of it in the near future.

The army authorities are making strenuous efforts toward the encouragement of civilian manufacture of motors. At present the Tokyo Gas & Electric Co. (Omori near Tokyo), make the 100 horsepower Daimlier motor, some of which have been accepted by the army; the Mitsubishi Co., Kobe, has bought the patent rights for the Hispano-Suiza motor, but it is not believed that they are able to manufacture it successfully as yet; the Kawasaki Dockyard Co., Kobe, has bought the patent rights for the Salmson motor, but has not made it successfully as yet; and the Muroran Iron Works is attempting to make the Daimlier motor. The Nakajima plane (Hall-Scott motor) is made at Gumba, about 35 miles north of Tokyo. It makes about five planes per month, but could make, if necessary, four or five times that amount. It is kept going through army orders for planes. A civilian flying school will be opened near-by in the very near future.

In general, the near future will witness strenuous efforts toward civilian manufacture of aeroplanes and aeroplane motors.

There are three boards or bureaus in the war department that have to do with aviation.

1. The aviation section, which deals with administration, under Col. Matsui.

2. The air bureau (Koku Hombu), which deals with training, instruction, construction, and all technical matters, under Gen. Inoue.

3. The "board of air," which deals with civilian aviation, under the vice minister of war, Lieut. Gen. Yamanashi, with Maj. Gen. Hata, general staff, as next ranking member.

The active part of the air service is organized into battalions, each battalion being assigned a separate district with its own fields, shops, etc. Each battalion normally consists of 3 companies of about 6 officers and 150 men each; each battalion commanded by a colonel or lieutenant colonel, and each company by a major or captain. In addition various officers are attached to the battalions and the different schools for instruction. All officers serving with the air service are on detail to that service.

The air force at present consists of the First, Second and Fourth Battalions of two companies each. These battalions will form the nucleus of the third, Fifth and Sixth Battalions, whose organization is to be begun in 1920 and finished by 1924. It is not believed that more than one company per new battalion can be organized this year. Organization may be expected to follow the French system.

There is one balloon company organized on the French system, at Tokorozawa. It has one Parseval dirigible (unserviceable) and several captive balloons. All material, organization and training is French. Two more companies are to be organized eventually.

The details of aero organization have not been definitely settled, but the following rough outline will give some idea of the proposed plans.

Battalion organization.

COMMANDER.

1 lieutenant colonel.

ADJUTANTS.

1 captain, 2 lieutenants.

(1) A COMPANY.

1 captains.
5 lieutenants.
15 noncommissioned.
140 enlisted.

(2) B COMPANY.

1 captain.
5 lieutenants.
15 noncommissioned.
140 enlisted.

(3) C COMPANY.

1 captain.
5 lieutenants.
15 noncommissioned.
140 enlisted.

HEADQUARTERS.

15 noncommissioned, and others (specialists).

Total strength, 500 officers and men

This figure will not include a large number of civilians, both men and women, who will be employed at the shops. At a recent visit to Tokorozawa it was found that about 400 civilians were employed there. Mechanics and workmen at the Kiki Arsenal, Nagoya, are all civilians.

Each battalion will probably average 29 to 30 commissioned and noncommissioned pilots. This number will probably be increased and lead to a larger number of officers and noncommissioned officers being assigned to each company.

It was the original intention to have each battalion entirely independent; that is, each battalion would have bombing planes, chasse planes, observation (artillery and photographic) planes, etc. This plan is being found unfeasible. Some system of individual bombing battalions, chasse squadrons, etc., will eventually be adopted.

The supplementary budget provides increased pay for air service as follows:

Regular fliers: Officers, 40 yen; warrant officers, 25 yen; noncommissioned officers, 15 yen; and privates, 8 yen per month.

Occasional fliers: Officers, 20 yen; warrant officers, 12 yen; noncommissioned officers, 8 yen; and privates, 4 yen per month.

In case of accident causing death or an incapacitating injury, his beneficiary (in case of death) receives ¥10,000; or he himself (in case of incapacitating injury) receives a lump-sum compensation in amount commensurate with the degree of disability.

The air-service appropriations for fiscal year 1920 is ¥8,293,070. It must be remembered that this sum is capable of sudden expansion due to the system of "continuing" appropriations, by means of which amounts set aside for future years may be spent sooner if necessary. The detailed expenditures are as follows:

Yearly allotment, air force	¥201,935
Air-force equipment	243,212
Improvement aerial provisions	5,056,203
(This includes organization flight school; changing period of replacement of planes from 2 years to 4 months and increase in number of mechanics.)	
Creation 2 air battalions (Fifth and Sixth Battalions)	2,518,562
Additional pay, air battalions	61,430
"Board of air" (air board)	211,928
Total	8,293,070

All battalions are to have three companies eventually.

One company balloon corps is stationed at Tokorozawa. Two other companies are in process of organization.

No war organization is as yet completed.

At Tokorozawa, which now turns out about 30 pilots per year, there can be trained 125 students per month, according to United States standard. In addition, the flying schools at the different battalions are capable of large expansion.

No mobilization plans are as yet completed.

In September, 1920, it was estimated that there are 150 to 200 pilots and 400 planes capable of some service at least if mobilized. Of this number about 250 could be classed as fighting planes.

Japanese airdromes at present are being located to meet the two requirements of available fields and location convenient to the divisions from which they must obtain their recruits. Thus the airdromes are tending to be distributed uniformly about the Japanese Empire. It is significant, however, that the Sixth Air Battalion is to be established in Korea, thus giving a good aviation base on the Asiatic mainland.

The Fourth Air Battalion at Tachiarai, on the island of Kugushu, is located favorably for action against Korea or north China. The island of Formosa would be the most favorable location for action toward the south or against certain portions of China. It is known that an aviation field is being constructed in that island.

Formosa.

The army aviation service is training and equipping a considerable aviation unit in the Formosan police force for use against the aborigines on that island. On February 17, 1920, 13 Formosan policemen left the army aviation school at Tokorozawa with pilots' licenses. Later four planes were flown to Formosa, and more policemen are training at Tokorozawa with 150-horsepower Nakajima planes.

There are no air units at present engaged in operations.

Aeroplanes, or parts thereof, are made at the Tokyo and Osaka Arsenals; Kiki Arsenal, Nagoya; Tokorozawa; Tokyo Gas & Electric Co., Omori; Mitsubishi, Kobe; and Muroran Iron Works.

The present status of the organization of air units (October, 1920) is as follows:

Battalion-Location.	Companies 1920.
First Kagamigahara	2
Second Kagamigahara	2
Third Yokaichi (now being organized)	1
Fourth Tachiarai	2
Fifth Amihara (to be organized 1920)	1
Sixth Heijo, Korea (to be organized 1920)	1
Balloon, Tokorozawa.	

NOTE.—A full description of the bombing school field at Tachiarai may be found in AN 2450; description of field at Kagamigahara in AN 2900 of Tokorozawa in AN 2908. While not yet officially announced (September, 1920), Japanese newspapers state the Fifth Battalion will be located at Amihara, Ibaroki Prefecture, about 40 miles north of Tokyo, and the Sixth Battalion near Heijo, Korea.

Aerodromes are located at all schools and battalions, and in addition at Susaka, Haneda, and Chiba. There is presumably one in Formosa (Ako), and it is reliably reported that temporary aerodromes are being established on various parade grounds of army units throughout Japan and Korea.

In addition to the schools located at battalions, the following special schools are located as follows:

Tokorozawa, about 30 miles west of Tokyo.

The Army Flight School.—After 6 months training in battalion, students spend 4 months at Tokorozawa on advanced work, followed by specialized schools at other places.

Shimoshizu (or Yotsukaido), about 27 miles east of Tokyo. School of reconnaissance; also radio and photography. For graduates of Tokorozawa.

Akenogahara (Yamada).—School of aerial fire.

For graduates of Tokorozawa.—This school has not yet been completely organized.

Mikatagahara.—Six miles north of Hamamatsu.

School of Bombardment.—For graduates of Tokorozawa. This school has not yet been completely organized.

Shops are located at air battalion headquarters, mainly for temporary repairs, etc. While it is the idea to eventually concentrate all shops in Nagoya, motors, aeroplanes, and other parts thereof at present are being made in the Tokyo and Osaka Arsenals; the Kiki Arsenal, Nagoya, and the old arsenal near Atsuta, a suburb of Nagoya, and at Tokorozawa. Civilian factories are the Tokyo Gas & Electric Co., near Tokyo, Mitsubishi Co. at Kobe, Muroran Iron Works at Muroran, Ito Aeroplane Co. at Chiba, Nakojima Co. at Gunma, and Kawansaki Dockyard Co. at Kobe.

Discipline is very strict. There is no evidence of relaxation in the air service, such as may be noted in other armies.

While there was some reason for believing that Japanese aviators led dissolute lives early in the history of their air service, that is no longer true. It was caused at that time by the low morale resulting from the great number of accidents that marked early Japanese flying.

The morale of the aviation personnel is very good, and will compare favorably with that of other branches of the service.

No use of air service in war to any extent as yet.

No special information on the subject of stamina that would differentiate the air service from other services.

Young aviators, at the division maneuvers in 1920, expressed dissatisfaction with the administration of the air service under Gen. Inoue. They feel that they are being compelled to fly unsafe machines, and that the development of the service is retarded by heads lacking technical ability. No outward evidence affecting the morale observed.

Training.

The French Aviation Mission, which came to Japan in January, 1919, is largely responsible for the great improvement witnessed in Japanese army aviation during the past two years. Before their arrival, the army air service was practically useless; now, however,

it has taken on a new lease of life and can be expected to develop into a very efficient service.

The present plan of instruction contemplates six months training in the battalion; upon graduation from this course, the student goes to the advanced flying school at Tokorozawa for a four months' course. Graduates of Tokorozawa then go to a specialized school for two months for practical, technical training in work pertaining to the branch to which the pilot is assigned. Those special schools are: First, Shimoshizu (Yotsukaido), school of reconnaissance; second Akenogahara (Yamada), school of aerial fire; Mikatagahara (6 miles north Hamamatsu), school of bombardment.

Student-fliers during battalion training usually fly both morning and afternoon, largely on Farman planes. At Tokorozawa, students fly both morning and afternoon, about 20 minutes each. Upon arrival at this school they are first given work on "roleurs" (Marone or Nieuport), then dual work on the 23-meter Nieuport in order to transform them from pusher (Farman) to tractor types. Having qualified on the 23-meter, they are "soloed" on the 18-meter Nieuport. At this point, the class of students is divided, those coming from bombing or long-distance reconnaissance battalions going to the Salmson or Nakajima, those for pursuit going to the 15-meter Nieuport, and those for observation staying with the 18-meter Nieuport. The work is nontechnical as regards specialized work, and the course is designed simply to make the pilots familiar with the types of machines they were to fly. Those flying the Salmson practice landings, steep-banked turns, and some acrobacy; those going to pursuit have the following course:

First. 15-meter Nieuport, 4 hours.
Second. Spad 220, 4 hours.
Third. Ground work each model controls to simulate control movements in acrobatic flying.
Fourth. Acrobacy on Spad 220.

In August, 1920, the 52 students at Tokorozawa were divided as follows:

1. Pursuit	5
2. Observation	5
3. Bombardment and long distance reconnaissance	9
4. Mechanics school:	
Officers	5
Noncommissioned officers	7
Privates	11

At Shimoshizu (Yotsukaido) the Salmson and Farman planes are used in training, and at Akenogahara (Yamada) the 15-meter Nieuport is used in gunnery work.

In addition to the training received in Japan proper, selected officers are sent abroad from time to time, usually to France or Italy for further instruction.

An American aviator comments as follows upon the flying at Tokorozawa:

> As a whole the course of instruction was good, but the flying, as compared to the flying of our students who had spent an equal time in training, was at best only mediocre. Generally speaking, the acrobacy observed was very poor and mechanical. Great improvement over the flying at Kagamigahara was noted. The handling of machines in the air was much better and the take-off and landings were a decided improvement, notwithstanding the fact that the surface of the field was not as good. Field discipline and management was excellent, being under an officer in charge of training, with the rank of major—a graduate of the school.

A training field for civilian aviators will be opened in the near future near the Nakajima plane factory in Gumba Prefecture. This school has good prospects for success.

It seems to be the general consensus of opinion of foreign air officers who have come into contact with Japanese aviators, that the Japanese have little natural ability as fliers. Their lack of mechanical ability militates greatly against efficiency, as well as their naturally slow reaction, and the tendency to sudden panic in an emergency. At present, they must be rated far below European or American pilots in efficiency. However, when the great progress they have made during the past two years under proper instruction is considered, it is only natural to assume that within a few years, they will approach near to Occidentals in efficiency. There is tremendous interest in the air service at present; Japanese inferiority in this service is recognized and admitted, and we may expect consistent efforts at improvement with good prospects of success.

Training of aviation battalions is prescribed in general terms in war department orders for military training. However, all technical training is directly under the war department air bureau. The former order prescribed in general the basic training of an infantry soldier for all air troops, and in addition instruction in handling the aeroplane, its structure and simple repairs; construction of landing fields; packing and leading the machine; field flying maneuvers. Balloon troops have the same general course of instruction, substituting balloon for aeroplane.

The most ambitious attempt so far in army aviation, was the long distance flight from Tokyo to Seoul, Korea, a distance of about 1,550 kilometers and return. Three out of five entrants made the trip to Seoul: the best time, actual flying, being 12 hours and 20 minutes, with 6 hours as the longest time in the air.

The navy long distance flight was from Yokosuka to Chinkai Bay (Masampo), Korea, and return. Only one of the three machines

entered made the round trip, but a new nonstop record of 643 miles in 11 hours and 28 minutes was made.

Flying exercises at battalions include formation flight and battle exercises. While Farmans are usually employed in these exercises, in one battle exercise the attacking party used Sopwiths and the defense Spads.

During the 1919 grand maneuvers, aviation showed a marked improvement over that of the previous year, 24 planes being used with 13 in the air at once. Bombing, photographing, firing, and signalling were simulated, though rather poorly. An English aviator stated that the proficiency shown there by the pilot graduates of the French schools was of about the same efficiency as shown by British students after 10 hours in the air.

At the division maneuvers in October, 1920, commissioned and enlisted personnel were from the Second Battalion, Kogamigahara. Of the 17 pilots and observers participating, 4 (officer) pilots were graduates of the Tokorozawa Flying School; the remainder had been trained in their battalion. Both French and British air officers stated that the flying showed marked improvement. Two landings made in a muddy field were reported as excellent. Six Nakajima, 150 horsepower Hall-Scott motors, and 6 Farman, 100-horsepower Mercedes-Daimlier motors were used. Three of the Nakajima were eliminated, 2 as a result of damage in landing and one on account of motor trouble.

The observation school at Shimoshizu trains about 15 pilot observers and 15 observers in one course of two months. The pilots are graduates of the Tokorozawa Flying School, while the observers are detailed from the army at large, many coming from the Field Artillery School and the Infantry Officers School, which are located near by. The school at present can handle about 3 classes per year. In addition to the Salmson and Farman planes the Nakajima is also used, but the pilots are becoming afraid of it.

At this school wireless telegraphy (no telephone), photography, and duties of spotting for artillery and infantry contact is taught.

Actual practice is had in artillery spotting for the Field Artillery School near by, and in infantry contact work with the Infantry Officers School.

Signaling from earth to plane and plane to earth is also a part of the course.

There is no such thing as an aviation staff proper. Such duties are performed by the director of aeronautics (chief of aviation bureau) and his assistants.

Aviation troops are armed with infantry rifle and bayonet.

The aviation clothing issued to pilots is uniform, and, for summer flying, very bulky. For example, pilots have been observed wearing

heavy coats with knitted helmets under large bulky leather helmets, and heavy gauntlets on a hot day.

At the division maneuvers in northern Japan in October, 1920, pilots wore leather coats, gloves, and helmets, with breeches and leggings of military type. The general appearance was very neat.

Collar insignia, consisting of a miniature propeller on a purplish red collar patch, is worn by both officers and enlisted men. Pilots wear an oval silver insignia after receiving their rating. It consists of a laurel wreath, with a gold star in the center, from which rays radiate to the wreath.

The collar insignia of the balloon company is a miniature metal balloon and car on a purplish red collar patch.

Types of Planes.

The Japanese Air Service has a multiplicity of types of aeroplanes and motors, most of which have been purchased abroad. Those manufactured in Japan are copies of the simpler European or American models.

Present plans contemplate the adoption of one plane and one motor for all purposes. As the French Mission recommended that this model be the Salmson (both plane and motor) it seems probable that that will be the type selected. The Salmson motor is already being manufactured in the Army Arsenal at Nagoya.

At present her main dependence for fighting lies in the possession of 100 Sopwiths, 30 Salmons, and 100 Spads. To this number might be added 40 or 50 Nakajima planes with Salmson or Hall-Scott motors, suitable for observation or bombing.

Japan also possesses a large number of training planes of various types and of various stages of efficiency. Many of these are second-hand machines purchased chiefly in France, or copies of them made in Japan. Chief among these is the Nieuport with La Rhone 50 horsepower motor, chiefly used at the flying school at Tokorozawa; the Nakajima with a 150 horsepower Hall-Scott motor; the Maurice Farman biplane with a Japanese-made 70 horsepower Renault or 100 horsepower Diamlier motor; and a number of Standard planes with 150 horsepower Hall-Scott motors (now called a pure Japanese type, as they make both plane and motor).

A large number of 150 horsepower Hall-Scott motors (estimated at 150) were purchased from the United States. The Tokyo Arsenal can make this motor now, and as it is popular with the Japanese, it may be presumed that they are being manufactured.

The balloon company at Tokorozawa has one Parseval dirigible (unserviceable) and 6 captive balloons purchased from the French. However, as they can make a captive balloon at the Fujiwara Aeroplane Co., it may be presumed that they now possess several in addition to those purchased from the French.

NOTE.—For description of types of machines and balloons see AN 2452 and AN 2908.

German Planes in Japan.

The first portion of the German planes allotted to Japan arrived 28 September. It consists of 74 planes and 171 motors. Among the planes were 7 Albatros, 7 Friedrichshaffen (?), 4 D. F. W., 2 large Gotha, 7 Junker, 11 Fokker, 7 L. V. G. (?). The motors were principally the Argos and Benz and some of the best special German models. An air office official said that many of these planes would be devoted to civil aviation.

Production of Planes in Japan.

A careful estimate of the total capacity of production of planes in Japan (land and sea) is 300 per month.

It is estimated that the total capacity of production of planes and motors suitable for military purposes is 180 per month.

The chief dependence of the army for motor manufacture is in the new factory (Kiki Arsenal) at Nagoya. At present it makes the Salmson motor only; eventually it will make the Salmson plane also. At present the factory is only turning out 7 to 10 motors per month, but is capable of making in a 24-hour day 5 to 6 "en ligne" or 4 to 5 "en etoile." (The Salmson is of the latter class.) This factory has the newest equipment, and if competent workmen were available, would be able to do excellent work.

NOTE.—For full description of this factory, see AN≠ 2452, 2897, 2909.

Tokyo Arsenal.

This arsenal can make the Daimlier and Hall-Scott motors, though the capacity is comparatively small. Its branch Arsenal at Nagoya can make the Renault and Daimlier motors in small quantities. It also makes the Farman plane, capacity about one and one-half per day.

Tokorozawa.

In addition to its repair shops, 15 and 18 meter Nieuports can be made at Tokorozawa. It also makes a plane copied from the Standard (American) plane, which, when fitted with a 150 horsepower Hall-Scott motor, is called a "purely Japanese model." Capacity of production is not large.

Tokyo Gas and Electric Works.

This is the most prominent civilian factory and has made several Daimlier motors that have passed army inspection. It has received substantial army orders for the purpose of developing the factory for use in an emergency. Present estimated capacity, 10 to 15 per month.

This company has a Rolls-Royce motor, but it is not believed they will be able to copy it.

Muroran Steel Works.

This company makes the Daimlier 100 horsepower motor, but its aeroplane department is still in the experimental stage. A strong company like this, however, may be expected to succeed eventually.

Nakajima Aircraft Works.

This factory is in Gumba, about 35 miles north of Tokyo. It makes the Nakajima plane, which is quite popular with the Japanese. At present it makes about 5 per month, but has a capacity of 4 or 5 times that amount. Hall-Scott motors are usually used with this plane.

Kawasaki Dock Yards (Kobe).

This company has the patent rights for the Salmon motor, but has not made any successfully yet. Such a strong company, however, may be expected to succeed eventually.

Mitsubishi Shipbuilding Works (Kobe).

This company is attempting to make the 220 horsepower Hispano-Suiza motor. While not yet successful, it may be expected that it will eventually succeed.

Ito Aeroplane Co. (Chiba).

This is a small company which makes a plane copied from the Nieuport. Capacity of production small.

The Fujiwara Aeroplane Co.

This company makes captive balloons copied from the French model. In addition, it prepares linen cloth and "dope."

Equipment.

Special equipment issued for the air service is almost exclusively French, having been brought over by the French Mission. This includes material of reconnaissance school, special apparatus for use at school of aerial fire and school of bombardment. (See AN 2452 for description.) The allotment of German planes and accessories will doubtless add to this list, and many will be copied in factories here.

Photography.

The French Mission brought with them a Berlier model 1916 laboratory carriage and three sets photographic apparatus including the automatic Aubry for the monoplane. Since that time 3 aerial cameras have been purchased direct from the Eastman Kodak Co., and it is possible that other sets have been purchased indirectly.

"*Wind caves.*"—The Imperial University now has a course in the theory of aeroplanes. Its equipment includes a Rolls-Royce motor and a "wind cave."

The naval air service experimental station in Tokyo has an "Effel" wind cave, presented by Mr. Effel, a Frenchman.

Local newspapers report that a sound-ranging device has been bought from France; while not definitely verified, the report is believed to be correct.

Three machine guns have been used in the air service. The Vickers (synchronized), the Japanese machine gun, and the Lewis

gun. The Japanese machine gun is not considered a success for aeroplane work, and it seems probable that some disguised form of the Lewis gun will be adopted.

The air service has a supply of automobiles, trucks, and motor cycles, mostly American makes, that is suitable for their present needs. Aerodromes in general are situated near railroads. Enlisted men receive instruction in taking down and assembling planes.

The French Mission brought with them the whole series of K. V. T. and S. alternators (the latter for the navy, sustained wave 150 kilometer radius), as follows: Four sending stations, receivers sustained waves; four receiving stations ("recepteurs de bord").

The depot of material is at the School of Observation at Shimoshizu (Yotsukaido).

An aerial liaison identical with the French organization of 1918, is contemplated; due, however, to the lack of special schools, great difficulty has been experienced in securing technical personnel. Further difficulty has arisen due to organization; instead of being turned over entirely to the communication regiment, the work has been divided between the aviation and the artillery with consequent lack of coordination and difficulty of developing an efficient technical personnel.

Wireless telephony is still in the experimental stage.

At the division maneuvers in October, 1920, the following was observed:

Hangars.—Large tents were used as temporary hangars, with smaller ones for accessories.

Instruments.—A French aviator stated that while seated in a Farman plane, he noticed that the altitude meter, pressure gauge, compass, and revolution counter installed in the machine were all of Japanese manufacture.

Photography.

A British air officer stated that the photography was very good.

Smoke Bombs.

These were used while flying over troops and towns.

Machine Guns.

None installed.

Wireless Telegraph or Telephone.

They were not used.

It was reported that position sketches were dropped for the use of troops.

At Shimoshizu School for Observers wireless telegraphy is taught, but nothing has been done as yet with the wireless telephone.

At Tachiarai hangars of excellent type are being installed. They are of steel, have slate roofs, a good type sliding steel door, and are exceptionally well lighted and ventilated.

Photography.

The photography at the Shimoshizu School for Observers was very good. A French camera is used; the Japanese have copied it but did not make the lenses.

The landing field during the maneuvers was under several inches of water. Planes started from a platform of boards about 150 feet long and 30 feet wide laid on the ground. Landings were made either on the platform or on the ground.

Mechanics and Workmen.

Competent workmen can not be found in Japan for the manufacture of aeroplane motors. The mechanic class simply does not exist, and there is no great body of skilled mechanics to draw from, as in Europe and America. In Japan workmen are recruited from anywhere, and their training is haphazard at best. Good workmen are few, and those few are usually old men.

The new aeroplane motor arsenal at Kiki (Nagoya) has suffered much from lack of competent workmen. The specialists, already few in numbers, prefer to remain in Tokyo and Osaka, where they are in great demand.

The number of foremen is, in general, sufficient, and those who have been abroad, especially, possess some good qualities. They are good copyists, have good theoretical capacity, but less often practical capacity. Unfortunately these good qualities fail when confronted with the fear of responsibility. They are extremely lacking in energy, yet try to render themselves indispensable. In general, they are good, though servile, copyists; they work without effective organization and with extreme slowness.

(NOTE.—This is an estimate of a foreign officer who has had exceptional opportunities for observation.)

Selected civilian mechanics are sent to Europe from time to time by both army and navy for instruction in aeroplane construction.

The war department recently announced that 10 foreign civilian experts would be employed, half in the Tokyo Arsenal and half in the Osaka Arsenal. Some of these experts will doubtlessly be specialists in aeroplane instruction.

In addition to the above, it is known that the army and navy, as well as civilian firms, have employed a considerable number of German mechanics, principally for submarine and aeroplane construction. Three hundred and eighty-one former German prisoners of war remained in Japan. Of this number it is reliably reported that the army employed 48, the navy 64, private firms employed 100, and 150 in commerce.

Landing Fields.

The mountainous terrain of Japan introduces an element of danger into flying, as landing fields are very limited in number. An alter-

nation of wooded mountains and highly cultivated rice paddies makes landing extremely hazardous except at specially prepared fields. Such fields are found at the location of all aviation battalions and aviation schools. In addition, the various parade grounds of the different garrisons usually serve for temporary landing fields and have often been made use of for that purpose.

The usual hangars are provided at battalions and schools but not at parade grounds.

The military authorities are now making strenuous efforts toward the mobilization of industry in time of war. Board is now at work on this subject, and the question is being studied with great care. Civilian firms are being encouraged to install machines for motor and plane construction for the purpose of training a nucleus of workmen looking toward expansion in time of war. The authorities recognize their deficiency in capacity of production and are trying to rectify it. This tendency has been particularly marked within the last 18 months.

Raw Materials—Steel.

While Japan is not a great steel-producing country, she will still be able to secure enough for aeroplane construction unless cut off entirely from the mainland of Asia.

The question of steel for manufacture of aeroplanes is completely solved. Japanese steel has given excellent results comparable to that obtained in France. It is furnished by the Nihon Tokushuko Kaisha (Japan Special Steel Co.) at Omori (near Tokyo), which, begun in 1914, has steadily expanded and now furnishes ordinary, fine, tool steel, and special steel to the Tokyo Arsenal, all of excellent quality. It will be able soon to furnish dies and stamps for aviation and artillery. This factory has just installed a 5-ton electric furnace for the purpose of experimenting in processes of manufacture. Success is very probable, and they count on installing several of such furnaces of greater tonnage, which will permit of an increase of production up to that of the Creusot Works.

This steel works is in condition to furnish the necessary steel for the manufacture of motors. The cost of production is too high to compete with factories abroad, but the Japanese Government is willing to pay the increased cost in order to have its own supply in time of war.

Aluminum.

Japan is dependent upon foreign countries for aluminum, neither bauxite or chrysolite being obtainable in Japan. The Aluminum Co. of America had a project of forming a large joint Japanese-American company in Japan, but no great progress has been made so far.

Wood.

All the islands of Japan are rich in pine, but in Hokkaido particularly there are several species of good white pine and spruce. One species (Yezo-matsu) is suitable for use in airplanes. There is unlimited supply of this spruce available.

Flax.

Flax is also grown in Hokkaido, and from this the Japanese make very good grades of linen and linen duck, suitable for the covering of airplane wings.

Silk.

Japan, as one of the great silk producers of the world, is in a particularly good position to manufacture silk envelopes, etc., for lighter-than-air craft.

Fortifications.

Aerial defense.—All fortifications and naval stations are now being supplied with the 3-inch antiaircraft gun, which is now being made at the Osaka Arsenal.

Navy.

Personnel.—Navy personnel is much superior to army personnel, especially in mechanics. Flying officers are less advanced than the army in training, due to the latter's French instructors. This condition, however, may be expected to change after the arrival of the British Naval Air Mission in the spring of 1921.

The number of navy pilots is estimated at not over 100.

A British Naval Air Mission, consisting of about 30 officers, will arrive in the spring of 1921. Their arrival is expected to revolutionize training and construction in the Japanese air service.

The naval air service is under the navy affairs bureau of the navy department.

The number of pilots is estimated at not over 100.

The minister of the navy stated in a recent interpellation in the Diet that the navy had at present 6 aviation corps, to be increased by 2 more corps during 1920. Strength of a corps is unknown, but presumably corresponds to a company.

There is believed to be no trained naval reserves.

Organization.

There is at present one battalion group at Yokosuka, one in Sasebo, and an embryo group at Kure. Present plans contemplate a very great increase, so that by 1923 there will be the following corps:

Kaizuru Naval Station	1
Kure Naval Station	4
Sasebo Naval Station	5
Yokosuka Naval Station	5

The basic unit of the naval air service is the division (sometimes called corps) or approximately 10 officers and 150 men. There is supposed to be 20 planes (land and sea) to each division. At Oppama field (Yokosuka) there are 3 such divisions and 1 balloon division. The latter consists of 5 officers, 3 warrant officers, and about 150 men.

The establishment of these corps will not complete the naval aviation plans.

Plans are being zealously rushed, looking toward the employment of planes on battleships. Most of the battleships and battle cruisers of the 8–8 fleet will carry planes.

The Asano Shipbuilding Co. is now building a 1,400-ton aeroplane tender, modeled after the British *Argus*, to be completed by 1922. At present the navy department has only two old-style tenders.

No war organization is as yet completed.

No mobilization plans are as yet completed.

Distribution.

Naval airdromes at present are located in the vicinity of naval bases.

North Saghalien.—The battleship *Mikasa* when approaching North Saghalien preparatory to army occupation of that place was preceded by a seaplane, which distributed proclamations to the inhabitants.

Normally there are no planes except in naval bases.

Naval air forces at present are located at Yokosuka and Sasebo with a small force at Kure.

Discipline.

The discipline of the naval air forces is excellent.

Training.

The original French Mission in 1919 trained 5 naval aviators in the pilots school at Kagamigahara, on the Nieuport and Salmson machines; 2 were trained in the School of Aerial Fire (machine-gun course) at Araimachi on the Farman 100-horsepower Benz motor and Tellier 180-horsepower Hispano-Suiza motor planes; 1 pilot and 6 bombers at School of Bombardment.

The Naval Training School at Yokosuka has a capacity (with present equipment) of 50 pilots per year. The present course is given on Maurice Farman seaplanes supplemented by the *Yokosuka* type seaplane. The majority of pilots have received no other training than that obtainable on these types. Seven pilots, however, are graduates of Tokorozawa and are now training on and experimenting with Sopwith "Pups," which they are flying from the deck of the mother ship and landing on a prepared field near the Yokosuka Naval Station.

As naval pilots have been trained only on old types of planes, they can not have a very high degree of proficiency.

The most ambitious attempt in naval aviation so far was the long-distance flight from Yokosuka to Chinkai Bay (Masampo) and return. Only one of the three machines entered made the round trip, but a new nonstop record of 643 miles in 11 hours and 28 minutes was made.

There is no such thing as an aviation staff proper. Such duties are performed by the chief of the aviation bureau, navy department, and his assistants.

Equipment.

The navy has about 200 planes. However, the minister of the navy recently stated in the Diet that the navy equipment consisted of 112 planes, 8 of which had 300 horsepower motors, 3 dirigibles, and 4 captive balloons.

The dirigibles are of the Vickers type.

Naval planes are the Sopwith with 110 horsepower Rhone motor, the Short with 230 horsepower Salmson motor, the Tellier with 200 horsepower Hispano-Suiza motor, the Short with 320 horsepower Sunbeam motor, the Tellier with 600 horsepower Hispano-Suiza motor; and the *Yokosuka*, a Japanese copy of a Curtis plane and copy of a French motor. The latter machine is called the "Japanese Navy type No. 2."

The dirigibles are said to be 5-seated, 2,830 cubic meter capacity, two 90 horsepower Rolls-Royce motors, a radius of action of 15 hours, speed 24.6 meters per second, carrying one light gun.

The captive balloon (English), 2-seater, 906.9 cubic meter capacity, diameter 8.13 meters, 557 square meter area of surface, and 558 kilograms weight.

There was no wireless telephone on navy planes at Oppama and nothing but obsolete American-made radio sets installed.

Cameras.

Some old and bulky Eastman aerial cameras were on hand, and there was a photographic laboratory at the naval station.

The following planes were observed at Oppama: Maurice Farman seaplane with both 70 horsepower and 100 horsepower Renault motor; *Yokosuka* type seaplane, 100–125 horsepower Benz motor; Short seaplane, 350 horsepower Sunbeam motor (only one); Tellier Flying Boat, with motor 220 horsepower Hispano-Suiza (only one); *Yokosuka* type seaplane, 180 horsepower Hispano-Suiza motor; Sopwith "Pup," scout land plane, 80 horsepower La Rhone. The Short plane was out of commission on account of having tried to carry 1,000-pound 18-inch torpedo. The planes in commission were in good shape and apparently well cared for.

It was reported that the navy intends using both land and seaplanes in the future, and are now experimenting with Sopwith "Pups." One battleship in the harbor was being fitted out with a

runway on the forward turret for the launching of "Chasse" planes. The navy is expecting in the future to be equipped with Aeros and Sopwith "Cuckoos."

At Oppama there are two captive balloons, Cocotte type; one is an old one of foreign manufacture, but the other is a copy of the old one, made by a Tokyo firm—it seems to be superior to the old one. All balloon equipment is of English type and with the exception of one Japanese copy of the generator were all of English make.

Hydrogen gas is manufactured from caustic soda and ferrosilicon at the Yokosuka Naval Station.

The navy is chiefly dependent at present upon Yokosuka for the manufacture of motors. Its capacity is small and comparatively unimportant. Sasebo is able to repair motors only.

The Yokosuka Naval Shops are building the Sopwith "Pup" plane, rate of production unknown, but five have already been built. They also make the *Yokosuka* type plane, and a modified 100 horse-power Benz motor, which is used in a number of the *Yokosuka* seaplanes. It is rumored that they are copying also the La Rhone motor. Both the airplane and motor repair shops are well organized, well equipped, and of sufficient size for present needs.

Landing Fields.

The Oppama Flying Field is located on a land-locked bay near the Yokosuka Naval Station. There is also a landing field for land planes near by.

The navy's plans for motor construction contemplate a very large factory at Hiromura near Kure. This factory was begun in 1919 and is expected to be finished in 1924. Manufacture will start in the spring of 1921, it making at first the Renault and Daimlier motors. Admiral Ohashi, head of the engineering department at Kure Arsenal, will be in charge. Its capacity when finished will be 150–200 motors per year.

The plans of this factory, however, will be changed very likely by the coming British mission, and we may expect it to make some British motor.

Mobilization.

It is not believed that army aviation has yet reached the stage when any extensive plans of mobilization are possible. All pilots of any value are immediately available, and there seems to be no reason why they could not be mobilized as fast as the other services. It is believed more trouble would be experienced with machines, as they are not kept in very good order.

Replacements.

Naturally an intensive course of training for additional pilots would be started if hostilities were imminent, not only at the schools but at the battalions as well. Most of these places are susceptible

to expansion. Great difficulty would be experienced, however, in providing adequate instructors, as well as proper battle planes; improvement in both these points, however, may be expected as time goes by.

Assembling points: The air force would be assembled largely at Tokorozawa and then at the battalions. Railroad facilities are ample for the purpose.

There are from 250 to 300 qualified military pilots, 7 organized companies, aviation, and 1 balloon company.

There are from 8 to 10 civilian fliers who would be of some value in case of war. From 1920 on, however, 10 civilians per year will be trained at army schools.

As officers are detailed from other branches of the service to aviation, there would be a large number available among officers of the active army, and the reserve available for training. Enlisted men would be drawn from the aviation battalions. However, considerable time would elapse before such men would be of any value.

Defense.

Japan is such a narrow country that all airdromes and air stations may be considered to be on the first line of defense.

Japan is a difficult country for flying, as it consists of wooded mountains alternating with paddy fields. Good landing places are rare.

There are airdromes at all schools and battalions and temporary landing fields on many of the parade grounds of the different regiments. It is probable that temporary airdromes will be established at several such places.

Distances are so short that air routes could easily be found to all important places in the country, especially if parade grounds are taken advantage of.

All arsenals, both military and naval, the shops at Tokorozawa and at battalions are essential to the air service. In lesser degree the Muroran Iron Works, the Government Steel Works at Yawata, the special steel works at Omori, the Tokyo Gas & Electric Co. at Omori, the Kiki Arsenal at Nagoya, and the school and shops at Tokorozawa are perhaps the most important places.

The present state of Japanese aviation is such that no offense against a foreign country is feasible. However, using Formosa as a base, operations against neighboring parts of China are possible. The same is true, if Korea is made a base.

General.

Political—Economic.—Judging by the lack of success of the only civilian organization, the Imperial Aviation Society, the sentiment of the people toward aviation is lukewarm. In spite of large amounts

of money donated by wealthy civilians and of constant Government encouragement, nothing of importance has yet been accomplished. Gradual improvement, however, may be expected. It has not been a question of money, but more of faulty organization and general lack of interest.

With the exception of aluminum and magnetos, Japan can make everything needed for aeroplanes. Just at present, capacity for making good motors is small, but will improve rapidly.

The climate of Japan is such that flying is possible at all times—for a good aviator with a good machine.

The total monthly capacity of production is estimated at 300 machines of all kinds, and 180 suitable for war purposes. That means a 24-hour day and full capacity working.

Routes.

Distances are so short that air routes could easily be found to all important places in the country, especially if parade grounds are utilized; it would merely be necessary to avoid the highest mountains.

Laws.

The board of air, under the presidency of the vice minister of war, is now engaged in the study of laws and regulations pertaining to aviation.

BLACKBURN SWIFT TORPEDO PLANE.

Source: Reliable. (13586)

29 December, 1920.

This plane is built essentially for carrying an 18-inch torpedo to fly from and land on a carrier. The plane is the work of Maj. Bumpus, designer for the Blackburn Co. The general appearance of the plane is rather curious. It has an abnormally thick fuselage and the engine appears to have been dropped. As a matter of fact, the pilot has been raised 18 inches in order to give a clear view over the engine for landing on the deck of the carrier. He does not look over the top of the plane, as stated in the inclosed newspaper clipping. The planes have a pronounced stagger, a small dihedral, and are swept back. The fuel tanks are between the pilot and the engine with the gravity tank on the top plane. The gravity tank is filled by a Vickers wind-driven pump mounted in the lower plane close to the fuselage on the port side. There is a double-sheet duralumin bulkhead between the engine and the fuel tanks. Abaft the pilot in a large compartment are stowed floats. The single-man cockpit appears rather cramped, but it is stated that the pilot is quite comfortable. The controls are the usual wheel and foot bar.

With the auxiliary wheel to the right hand for shifting the angle of the horizontal stabilizer in the cockpit are the following: Altimeter,

air speed meter, oil pressure gauge, tachometer, throttle and spark controls, torpedo release lever, carburator choke, starting magneto, radiator ventilator adjuster, water thermometer, gasoline jettison valve, wheel release, compression release, and safety belt.

On the cowl are mounted a tube for gasoline flow and a glass shade for protecting the eyes of the pilot.

The chassis is rather novel. The wheels are each held by a separate axle, giving a clear drop for the torpedo. The bracings to the fuselage are of tubular steel wire. The shock of landing is taken by compression of 40 one-half-inch rubber rings separated by thin steel disks, which are about 1 inch greater in diameter than the rings.

The rings and disks are in a steel tube and are compressed by the action of a plunger. It has been found on test that the rings are what would be 20 inches of rubber compressed to approximately 12 inches. A similar method of compression is used on the tail skid which moves with the rudder, thus greatly aiding the pilot when he is taxi-ing on the ground. The wheels of the chassis are released by pulling a wire which permits powerful springs in the axle to shove them off. When the plane is on the ground the plane of the wheel is perpendicular to the plane of the earth, but when in the air and the load is off, the plane of the wheel slants slightly inboard and down, thus making release more easy. There are no hydrovanes whatever on the chassis. The torpedo is held in two brackets beneath the fuselage at the point where the chassis is secured. Two of the three exhaust pipes run on either side of these brackets, thus furnishing heat to the torpedo when the plane is in the air. The gasoline jettison pipe comes out above and on the port side of the torpedo bracket.

There is nothing startling about the construction of the wings. The ribs and spars are of wood, while the struts are of steam line steel tubing. The covering is of fabric. The wings fold back quite easily, in spite of the stagger and the dihedral, and are held close to the fuselage. The aileron controls come out of the fuselage near the trailing edge of the wings, so that no adjustment has to be made when the wings are folded back.

The plane could probably land and be run on the elevators, folded, and lowered away in about five minutes. The longerons from the cockpit aft are of wood, but forward of the cockpit they are very heavy steel tubes, the advantage being to have as little distortion as possible from difference of temperature and the dampness of the sea air.

The whole machine gave one the appearance of being staunchly built throughout; one that would stand an immense amount of handling both in the air and on the carrier. The workmanship is excellent. The length is given as 35 feet 6 inches and the width as 12 feet; as a

matter of fact, the length is about 1 foot shorter and the width a few inches greater. The engine is given as 450-horsepower Napier Lion. The pilot should need only 375 horsepower at 1,900 revolutions. A two-bladed untipped propellor is used. The parts of the engine are readily accessible for overhaul and adjustment. There is a powerful dope gun on the port side of the engine.

During a flight of this plane, when not equipped with a torpedo and in about a 12-knot wind, the pilot got the machine clear of the ground in not more than 40 yards; he then zoomed as steeply as a chasse machine could zoom. He climbed to 10,000 feet without any difficulty whatever and made a slow air speed of 37 knots. It is stated that the plane will most certainly do 102 knots; that there is not much difference in this top speed, light or loaded. Speed is a great asset for a plane which is to fly from a carrier.

It is stated that the plane is quite simple to fly; that it carries slightly left rudder, does not fatigue, and flies at top speed with hands off the controls, climbs well, and lands easily.

RECENT DEVELOPMENTS ON ITALIAN AERONAUTIC INSTRUMENTS.

Source: Reliable.

(4104.)

9 December, 1920.

Multiple Manometer.

This is a device used in studying the pressure distribution on different parts of an airplane in flight. The pressure indicating elements consist of 20 air-speed indicator diaphragms arranged in a row. A pointer with recording pen is attached to each diaphragm. The pointers rest on two drums which are operated by clockwork (10 pointers to each drum). Each diaphragm is connected by tubing to one of the points on the wing or fuselage whose pressure is to be determined. Smoked paper is used for the records.

Barograph and Manometer with Airtight Case.

This instrument has been constructed for use in studying the pressure variation within the fuselage of an airplane. It consists of an ordinary de Giglio barograph and a sensitive recording manometer with corrugated metal capsules both inclosed in the same airtight case. The case is connected by tubing to a static pressure head which is located on one of the wings of the airplane like the static head of an ordinary air-speed indicator, thus maintaining the pressure to which the barograph element and the exterior of the manometer capsules are subjected equal to the true static pressure of the air at the altitude at which the airplane is flying. The interior of the manometer capsules are connected by tubing to a second static head

which is located within the fuselage whose pressure variations during the flight manouvers are to be studied.

The manometer indicates the true difference in pressure between the fuselage and the surrounding atmosphere. Both barograph and manometer are provided with pointers which rest on the same recording drum. Smoked paper records are made.

The static heads are like those ordinarily used with Pitot air-speed indicators, except that they are double—that is, they consist of two concentric cylindrical tubes with an annular row of holes in each. The object of this double Pitot is to eliminate fluctuations due to pressure irregularities in the atmosphere and errors which would arise if the tubes were not pointing exactly in the direction of motion.

Recording Performance Test Instruments.

A set of recording test instruments, including air-speed indicator, tachometer, accelerometer, and radiator thermometer have been made by substituting for the diaphragm element of a de Giglio barograph an ordinary air-speed indicator, tachometer, etc., and altering the mechanism so as to give records on the drum of the barograph. The accelerometer consists of a small cylindrical metallic mass balanced against a spring. Under acceleration the mass is set in motion in opposition to the spring and the magnitude of the displacement, which is a measure of the acceleration of the airplane, is indicated through the medium of a suitable recording mechanism on the drum of what was originally the barograph. There is also provided on each of these instruments a pen operated by an electromagnet to give a time signal simultaneously on all of the instruments. The records are made on smoked paper fastened to a thin metallic drum or sleeve which fits over the ordinary drum of the barograph.

Statoscopes.

A statoscope has been devised which consists of a battery of corrugated metallic capsules surrounded by a double-walled heat-insulated container filled with air.

Communication is made with the surrounding atmosphere through a capillary opening. The motion due to the expansion or contraction of the diaphragms under differential pressure is communicated by a suitable transfer mechanism to the pointer, which rests upon a drum and gives a record of the fluctuations of altitude. On some of the Italian dirigibles a simpler form of statoscope, which consists of a metal reservoir filled with air and connected to a manometer of the liquid column type, is used. The metal containers are not provided with heat-insulating covering.

Tensiometer.

This device, which is intended for measuring the tension in airplane wires during flight, consists of a flattened hollow ring filled

with liquid and communicating through copper tubing to a pressure indicator located in the fuselage. This indicator shows the changes of pressure due to the deformation of the ring under the fluctuations in tension of the member under test. To eliminate the effect of changes of temperature and also of centrifugal force, a second tube connected to the case of the indicator runs parallel to the main tube and terminates in a bulb located near the ring. The tube and bulb are filled with liquid, and the centrifugal effect set up in these is used to conterbalance the exactly equivalent effect in the main tubing and ring.

Standard Instrument Equipment.

Some of the more important of the instruments with which Italian dirigibles and airplanes are ordinarily equipped are de Giglio, Agolini, and Richard barographs and altimeters, compasses made by the Istituto Idrografico, Genoa, Tel tachometers and Pensuti air-speed indicators.

AVIATION FORCES, JAPANESE NAVY.

Source: Reliable.

(14023)

26 November, 1920.

The scheme of increasing aviation forces, authorized by the Forty-third Diet, and to be completed by 1923, is as follows:

Location and number of divisions.

Location.	Number of divisions.	Number of existing divisions to be completed this year.
Yokosuka—Aeroplane Division	5	2
Yokosuka—Balloon Division	1	Part.
Yokosuka—Dirigible Division	1	Part.
Yokosuka—Training Division	2	2
Kure—Aeroplane Division	4	None.
Sasebo—Aeroplane Division	5	2
Maizuru—Aeroplane Division	1	None.

Aeroplanes to be Carried by Ships.

All principal men-of-war and other ships are to carry one or two aeroplanes.

Mother Ship.

There is as yet no regular mother ship for aeroplanes, except the *Wakamiya*, temporarily converted for that purpose. Besides the *Wakamiya* one mother ship, the *Hosho*, is now being built at the Asano Yard. This ship is to have a spacious long deck where aeroplanes can fly from or land, and will be otherwise furnished as such mother ship.

Types.

At present the navy is using principally what is known as the Yokosuka Yard type, together with machines already existing. This year the navy has bought patents of machines and motors from England and France and they are now investigating what type to be adopted. Dirigibles are small class flexible "S. S." type.

Building Capacity.

The Yokosuka, Kure, and Sasebo Navy Yards have shops to build and repair flying machines. They are now building a large flying machine factory at Hiro-mura, about 5 miles west of Kure, which will commence building flying machines very soon.

Investigation Bureau.

An office for carrying out investigations in regard to flying machines was opened in April, this year, in the Navy Arsenal, Tsukiji, Tokyo, which is provided with an air cave.

Aviation Ground.

This year the navy purchased over 800,000 tsubo (over 650 acres) of land near Lake Kasumiga-ura, which will be used for testing flying machines, etc. When aviation officers from England arrive as instructors the place will be used as a training ground.

Naval Aviation Expenditures.

The reported naval aviation expenditures since 1911 have been as follows:

1911 to 1917, per year	¥400,000
1918	1,000,000
1919	2,000,000

AVIATION IN JAPAN.

Source: Reliable.

(9318)

24 December, 1920.

Aerial Photography.

1. It is said that the Japanese have thousands of these photographs, but that they do not know yet how to read them.

They are now receiving instruction in reading air photographs.

Over a year ago, however, very good photographs taken by naval aviators at Oppama were seen.

2. In June, 1920, the Eastman Kodak Co. supplied the Japanese Government with 4 model B–1, 4 by 4, and 4 model K–1, 18 by 24 cm. aerial cameras, with gelatine filters, films, etc.

The navy department has ordered from the same company, 50 model B–1 aerial cameras, 10 to be shipped about 30 October, and 40 to be shipped about 31 December, 1920, together with a large order of films. The navy department has also ordered 50 French aerial cameras (nonautomatic) from the Konishi factory in Tokyo, to be ready as quickly as possible. (1 Dec., 1920.)

The Tokyo Gas & Electric Co. has bought out two local companies, one of which manufactured calculating machines and the other optical instruments; 6 German experts have been employed by this company for the manufacture of cameras and camera supplies.

Land Aircraft Defense.

3. There is no land stationary air protection (no antiaircraft guns), except at one or two of the principal naval stations, but the army has many antiaircraft guns capable of being mounted on trucks.

Purchase of Heavy Aircraft Guns.

4. The Japanese Navy Department has recently endeavored to purchase from Vickers some heavy aircraft guns (about 50 mm.). The Vickers Co. refused to sell unless the Japanese bought the patent rights. The navy department agreed to buy the patent rights and further negotiations are now being conducted in London.

The navy department has also made inquiries of the French concerning a 47 mm. gun to be used on a Tellier plane.

Standardization of Airplane Construction.

5. In order to standardize airplane construction in Japan, the military aviation bureau has invited all civilian airplane workmen to a course of instruction at the military factory in Tokorozawa. The first class, which is now in progress, under charge of a French aviator, is composed of four engineers and 46 workmen from the airplane factories at Kobe, Kawasaki Dockyard, and Nagoya Arsenal.

RESULT OF MAPELLI CUP RACE FOR SMALL AIRPLANES FOR AERIAL TOURING HELD IN ITALY.

Source: Reliable.

(12804)

7 December, 1920.

1. In connection with the navy's purchase of three M–16 hydroplanes, the following information concerning a recent race between small planes will be of interest:

4 December, 1920.—The Mapelli cup race for small airplanes for aerial touring was held in the month of November. It was won by an M–16 biplane of the Nieuport-Macchi firm.

The conditions of this competition were the following: The competitors had to start at a previously designated hour or be disqualified; the competition was over a prescribed course of 180 km.; seven landings were required at previously designated points on the course; the maximum horsepower permitted was 50; the maximum span of wings permitted was 6 meters; after the first start any necessary repairs or adjustments were required to be made by the pilot without our assistance; replenishing gasoline and oil and starting the motor

at the various prescribed stops were performed by personnel designated for that purpose or by personnel furnished by the competitor if he desired to have his own personnel at the various stations; the competitors were required to pass over a series of mountains, the first having an altitude of 1,000 meters, the second an altitude of 1,500 meters, and the third 2,500 meters.

Three airplanes competed in this race; two of the M–16 type and one Breda triplane. The Breda triplane was equipped with a 40-horsepower Anzani motor. One of the M–16 planes was equipped with a Gnat ABC engine, 30 horsepower. The M–16 that won the competition was equipped with an Anzani 30-horsepower engine. The winning airplane took 4 hours 34 minutes to complete the course, the total flying time being 2 hours and 27 minutes. At one of the landings the pilot was delayed by being compelled to change spark plugs and to adjust his carbureter.

This race will be an annual international competition in Italy, the course each year being twice as long as the preceding year.

In addition to the cup there is a money prize amounting to lire 5,000, also three gold medals.

AERIAL MAIL SERVICE BETWEEN SPAIN AND MOROCCO.

Source: Reliable.

(7424)

7 December, 1920.

According to information received, the Spanish postal authorities have invited public tenders for the establishment of two aerial lines to carry the mails between Malaga, Spain, and Melilla, Morocco, and between Seville, Spain, and Larache, Morocco.

The Malaga-Mililla service is to be effected by not more than six hydroplanes, while 10 ordinary aeroplanes will assure the operation of the Seville-Larache line. The speed over both routes is to be not less than 90 miles an hour, while units of both types of aircraft used must be capable of carrying 600 pounds of mail matter.

If landing stations in full working order are not already owned by the Spanish Government at Malaga and Melilla, they are to be constructed at the expense of the contractor. The necessary aerodromes, offices, and landing places at Seville and Larache, however, are to be furnished by the Government to the contractor successfully bidding for the operation of that line.

The contracts for the contemplated mail-carrying services are to be for a period of four years, the Government to have the privilege of terminating such contracts if service is not inaugurated within six months, in the case of the Malaga-Mililla line, and two months in the case of the Seville-Larache line, subsequent to the signing of the respective contracts.

AVIATION; LONG DISTANCE FLIGHT. (SOUTH AMERICA.)

Source: Reliable.

(13891)

30 December, 1920.

On 29 December, 1920, the Brazilian civilian aviator, Edu Chaves, of Sao Paulo, completed the first successful long-distance flight made in South American by arriving in Buenos Aires, Argentina, at the conclusion of a flight from Rio de Janeiro.

The flight was made in five days and included a total flying time of approximately 19 hours.

The various stages of the flight were as follows:

25 December, Saturday, flew from the army aerodrome, Compos dos Affonses, Rio de Janeiro, to Campo de Guapira in the city of Sao Paulo, distance 400 kilometers, time elapsed 2 hours 3 minutes.

26 December, Sunday, flew from Sao Paulo to Guaratuba in the State of Parana, distance 450 kilometers, time 2 hours 50 minutes.

27 December, Monday, flew from Guaratuba to Porto Alegre, time elapsed 4 hours 40 minutes.

28 December, Tuesday, flew from Porto Alegre to Montevideo, Uruguay, time elapsed 6 hours 10 minutes.

29 December, Wednesday, flew from Montevideo to Buenos Aires, distance 220 kilometers, time elapsed 3 hours 3 minutes.

Chaves used for the flight a Curtiss-Oriole plane which was furnished him by the State of Sao Paulo which formerly maintained an aviation school.

AIR BOARD ESTABLISHED. (JAPAN.)

Source: Reliable.

(6591)

24 December, 1920.

An air board has been formed. It is composed of all the high ranking officers of both the military and naval air services. This board is not expected to take any definite action but only to draw up plans for the future organization and development of the air service.

Several plans have been proposed, but there is no way of telling which one will be adopted. However, the general trend is toward a unified command of all the air forces.

One plan is to have under one general planning section three permanent (noninterchangeable) air services, namely, army, navy and commercial.

A second plan is to have, also under one general planning section, three permanent military services, namely, army, navy and coast defense. Commercial aviation is not included under this plan.

The planning section referred to in the two above-mentioned cases, will be charged with the working out of only general policy, and will have no direct authority over any one branch of aviation. It will

probably be in the nature of a general board made up from the various air services.

A third plan is to have one air service. The personnel of this service will be independent from the army and navy, but will constitute a third military service. Under this plan the aviation department alone will be responsible for the equipping and training of the air force. And it will entail to the army, navy and commercial work such units and personnel as it sees fit. Such units will, while serving with various organizations, be under the immediate command of the force commander with which they are serving.

AERIAL MAIL CONTEST. (JAPAN.)

Source: Reliable.

(12687)

24 December 1920.

The second Aerial Mail Contest took place 21–23 November inclusive:

Route.—First day, Osaka to Zentsuji (Shikoku, 220 kilometers; second day, Zentsuji to Oita, 245 kilometers; third day, Oital to Kurume, 185 kilometers.

Entries.—Shimada in a Shirato plane, 120 horsepower motor. Ishibashi in a Spad, 22 horsepower Hispano-Suiza motor. Goto in an Ito, 120 horsepower Rhone motor. Mizuda in a Nakajima, 220 horsepower Sturtevant motor. Takahashi in a Shirato plane, 180 horsepower Hispano-Suiza motor.

Incidents.—Shimada had engine trouble at the start and did not participate; Mizuda had engine trouble after the first day's flight and did not continue; Takahashi finished the flight but broke a propeller in landing.

Performance.—The best time was made by Ishibashi in a Spad—3 hours 30 minutes, for 650 kilometers. Longest flight 1 hour 20 minutes, 245 kilometers. The flight itself was of the simplest character, involving only short daily flights. The small number of entries was disappointing. The Shirato plane is made in a small private factory in Chiba Prefecture near Tokyo.

ITALIAN AIRPLANES PURCHASED BY POLAND.

Source: Reliable.

(14042)

12 January 1921.

There have been purchased in Italy and shipped to Poland during November and December 100 SVA airplanes. One hundred more Italian airplanes will be purchased by Poland in the immediate future. It is stated the 100 airplanes already shipped were manufactured by Ansaldo & Co., of Turin, Italy.

COMMUNICATIONS.

THE R. A. F. METHOD OF DIRECTION FINDING BY WIRELESS TELEGRAPHY AND DESCRIPTION OF SET USED.

Source: Reliable.

(13963)

16 December 1920.

The following is a description of the R. A. F. method of direction finding and set (radio compass), commonly called in the British Royal Air Force, "D. F. W/T".

The object of this apparatus is to enable the aerial navigator to find bearings of known wireless stations, and thus to determine his position and set his course by employing navigational methods.

If a coil be used as an aerial, the amount of energy which it picks up from the transmitted waves from a distant station depends not only on the power of the waves but also on the direction of the coil relative to the direction of motion of the waves. Thus, if the edge of the coil be pointed towards the transmitting station, the power picked up is relatively large and signals are strong, while if the plane of the coil be at right angles to the direction of the incoming waves, no power is absorbed at all, and so no signals are heard. If the coil be turned from one position to the other, signals gradually decrease as the minimum position is approached.

In the R. A. F. method of direction finding, two D. F. aerial coils fixed to one another at right angles, are used. One of these is called the "main" and the other the "auxiliary" coil. In large aircraft whether lighter or heavier than air, the coils are mounted so that they may be rotated about a spindle inside the machine. In small craft, where the space available will not admit rotating coils, the coils are fixed along the planes and struts, and the whole craft must be turned in order to obtain a bearing. Large bombing aeroplanes are fitted with both types of coils, as each has special advantages from the point of view of convenience in navigation.

A receiving station using one coil only may determine the direction of the incoming waves, and consequently, that of the transmitting station, by two methods:

(*a*) The coil may be turned until signals are a maximum, when the plane of the coil will pass through the transmitting station.

(*b*) The coil may be turned until the signals are a minimum, in which case the direction of the transmitting station is along the axis of the coil (i. e., at right angles to its plane).

These methods, however, have serious disadvantages, in (*a*), the the direction can not be found accurately because the strength of signals varies very little when the coil is turned several degrees out of the true maximum position.

In (*b*) although the variation in strength near the minimum is rapid, the fact that signals are inaudible near the minimum makes the method unsuitable for use in the air, where noise is always more or less present; there is also the great disadvantage that signals are not readable during the operation of taking a bearing. Again the minimum can only be found by finding the two positions on each side of it where the signals are just audible.

The R. A. F. method combines the advantages of both of these methods. The two coils are at right angles to each other as mentioned above, and are used as follows:

(*a*) The main coil alone is switched in and is turned until the signals appear to be a maximum.

(*b*) The auxiliary coil is then switched into the circuit in series with the main coil; as compensating arrangements are provided this does not alter the turning.

(*c*) The auxiliary coil is reversed once or twice by a reversing switch (one position adding its energy to that of the main and the other subtracting or partially neutralizing the energy of the main). If the strength of signals is the same with the switch in either position, the plane of the main coil is exactly in the direction of the incoming waves and the bearing given by the plane of the main coil may be read on the compass. If the signals are not of equal strength the coils must be moved until they are and the bearing then taken.

The explanation is that when the main coil is on the exact bearing the auxiliary coil is in the minimum position and is picking up no energy; hence it neither adds to nor subtracts from the strength of the signal.

By any method used only the line through the transmitting and receiving stations is found. The transmitting station may therefore be either on the one side or the other of the receiving station. This, however, causes no difficulty in actual working since the D. R. position is known and a rough estimate of the position of the machine in relation to any station is always known.

Description of D. F. W/T Set.

D. F. coils.—As previously stated two types are used: (1) Fixed coils; (2) movable coils. In small heavier-than-air craft fixed coils only are used where there is not room in the fuselage for movable coils of sufficient size.

Fixed Coils.

The main coil is usually in two sections, one on each wing, the windings running up an after strut, across the upper plane, down a leading strut, and along the top of the lower planes to each side of the fuselage. The main coils thus run fore and aft.

The auxiliary coil may be in two parts like the main coil or in one only. In the first case the wires run up an inner strut and along the lower plane to where they started, a similar coil being wound on the other wing. In the second case one strut on each side of the fuselage is used. In both cases the planes of the coils are athwartships. The same strut should not be used for main and auxiliary coils.

Winding of Coils.

The wire used is flexible rubber insulated wire of low resistance such as G–6706 wire, electric, pattern 482, which consists of 70 strands of No. 36 tinned copper, rubber covered, and is sewn on to a band of aeroplane fabric, there being four wires on each band with spaces of about five-eighths inch between them and two wires on the lead in band. The band is then doped down to the planes or taped and doped on to the struts.

This insures a permanent and roughly uniform spacing between the wires and also provides a convenient method of attaching them to the planes.

In large planes (Handley Pages) hollow (dummy) struts are sometimes fitted between the leading edges of the plane through which the band of wires of the coil are doped to the leading edge of the plane.

The main coils each contain four turns and all eight are in series, the dimensions of the coils being 12 by 6 feet and their inductance equals 0.300 mics. and self-capacity equals 0.5 jar.

The auxiliary coils contain four turns each and all turns are also in series. The dimensions are 17 by 12 feet; inductance equals 0.620 mics; self-capacity equals 0.4 jars.

The total self-capacity when both coils are in series is 0.20 jar and the total inductance about 0.920 mics.

Hence the shortest wave which can be received is about 1,000 meters.

Movable coils.—These coils consist of light rectangular wooden frames fixed at right angles to one another and mounted so as to be rotatable about a vertical axis through the middle point of their horizontal sides. On each frame is wound a coil the turns of which are in vertical planes. The coils may be of one or two kinds, the box pattern or the pancake pattern, the former being most commonly used. In the box pattern the crossover from one turn to the

next is on the top or bottom only. The active parts of the turn are therefore strictly vertical and parallel.

These coils are suitable for use in all types of aircraft, whether lighter or heavier than air, in which there is sufficient space to mount and turn the cubical or rectangular frame (not less than about 2½ feet high and 2 feet in diameter) on which the coils are wound. The dimensions of these coils naturally differ in different types of aircraft according to the space available and the wave lengths of the stations to be used as beacons.

Limits to size of coil.—Since the voltage induced by the transmitted waves in a coil is approximately proportional to the number of turns on it multiplied by its area, it is advantageous to put on as many turns as possible. The limit to the number of turns depends on the shortest wave length to be received and hence on the inductance of the coil and its self-capacity. For good signals the product of the two latter must be kept so small that about 0.25 jar at least has to be added to tune the circuit to the shortest wave.

Aerial Connection Box.

The ends of the leads from the fixed coils in the wings are brought in to terminals on a small ebonite panel. As there are usually four coils, two main and two auxiliary, there are eight terminals. One brass connecting strap is provided to connect the two main coils.

The four remaining terminals, i. e., the outer ends of the pairs of main and auxiliary coils, are used for making connections to the tuner switch box. One column of terminals is marked "Port" and the other "Starboard," the upper four terminals (two "port," two "starboard") being marked "Main Coil" and the "Auxiliary Coils" the lower group. It is most important that the coils are connected up in the proper "sense" in every case, so that the two coils forming the main coil should assist one another, and similarly for the parts of the auxiliary coil.

Receiving Cabinet.

A combination 6 or 7 valve type is used. No leads of any kind are permitted near this, or in fact near any part of the D. F. circuit, as they are liable to conduct magneto and other disturbances to the receiver, a good rule being not nearer than 2 feet.

Tuner Switch Box.

This apparatus was designed especially for use with two direction-finding coils set at right angles, and permits bearings to be taken by the R. A. F. method. The case is of teak wood with ebonite top panel, to which all working parts are secured. The following component parts are secured inside the case:

(*a*) Condenser, continuously variable.

(*b*) Condenser, variable step by step.

(*c*) Change over switch.
(*d*) Reversing switch.
(*e*) Balancing coils.
(*f*) Terminals, wiring, and engraving.

(*a*) The continuously variable condenser is of standard type, and has a capacity of from 0.12 to 1.5 jars and ebonite dielectric.

(*b*) The variable step by step condenser consists of a series of mica condensers embedded in paraffin wax, connected to a circular-studded switch. The capacity can be varied in steps of 1 jar from zero to 6 jars. The above two condensers being connected in parallel enables any capacity to be obtained from 12 to 7.5 jars.

(*c*) *The change-over switch.*—The working parts of this are fitted under the ebonite panel, and are operated by a diamond-shaped handle on the face of the instrument. The switch is double pole, two-way, contacts being made by brushes pressing on segments mounted on a circular ebonite drum. The construction is of a special nature to prevent any break in the circuits during change over. The total movement of the switch is 90 degrees; during 60 degrees of this movement all connections are short-circuited. This eliminates loud clicks in the telephones attached to the amplifier.

(*d*) *Reversing switch.*—This is similar in construction to (*c*), but is provided with a long brass handle, and has a movement of 60 degrees only, during 20 degrees of which all connections are short-circuited. The function of the switch is to reverse the connections of the auxiliary D. F. coil in the circuit.

(*e*) *Balancing coils.*—These are fitted under the ebonite panel. Each coil consists of a pancake winding, the inductance of which depends upon whether fixed coils only or both fixed and rotating coils are used. Where fixed coils only are fitted, each coil has an inductance of 400 mics. Where both types of coil are fitted, the inductance is 1,200 mics. each. Each coil is inclosed in a flat circular ebonite pillar screwed to the back of the panel. The other coil case is arranged to slide in an ebonite guide, so that the mutual inductance between the two coils can be varied. The coils are connected in series, and use is made of their mutual inductance to obtain a total inductance equal to that of the auxiliary coil. The inductance of the balancing coils is initially adjusted to equal the inductance of the auxiliary D. F. coil, and when the change-over switch cuts out the auxiliary coil, the balancing coils are thrown in in lieu. In this way the inductance of the circuit remains unchanged and the tuning condensers need not be readjusted. The setting of the balancing coils, when once made, need not again be altered unless the apparatus be used with a different set of D. F. coils. For this reason it can not be adjusted from the face of the instrument.

Steering Indicator.

An electric tell-tale system to enable navigator to signal to the pilot the course in degrees which he should steer.

The navigator's compass must be properly adjusted and swung from time to time by an aerial navigator. No leads carrying current should be run within 4 feet of it. Pocket knives, pliers, telephones, and similar pieces of iron or steel should not be brought near it when taking readings. This is particularly important with reference to the telephones, since if the operator leans over to read the compass the telephone head set will undoubtedly cause a large error in the readings.

Compensating inductances are used when both types of coils are used in a machine, so that the same point of tuning is retained when using either the fixed or rotating coils.

Remote control for turning the moving coils is necessary on account of its inaccessibility. Stops are provided on moving coils so that movements of not more than 100 degrees will be exceeded. The pointer is usually on the forward side of the scale, which scale is marked in red on the port side and green on the starboard side, from zero degrees to 180 degrees on each side.

Magneto and Generator Screening.

All wires running between the engine and fuselage are screened throughout. This is carried out in two ways. The wires in the fuselage themselves are screened with braiding, and in case of the large F–5 seaplanes the wires running through the fair-leads themselves with a layer of tin foil, securing by a wrapping of fabric, the tin foil being earthed at both the fuselage and engine under the fair-leads. Wires from magneto block are screened with braiding in a similar manner to the fuselage leads; but in the case of an engine with complete cowling this is not necessary, the screening then being confined to the wires in the fuselage. All the earthing wires of this screening system are as short as possible. When no screen is required in the engine itself—that is, on an engine with complete cowling—the fuselage screening consists of copper wire wound around the leads two turns to the inch instead of braiding, as stated above.

To take a D.F. bearing.—To take a trial bearing, the test, if possible, is made on some transmitting station such as Paris, Rouen, or one of the "beacon stations," who hearing from the place where the test is being made has been accurately calculated on from the "Equal bearing" charts for the district. The change-over switch is placed in the "one-coil" position and the station is tuned in by the variable condensers. Should the main D. F. coil happen to be exactly on the minimum position, signals will not be heard; but this is unlikely and is quickly rectified by movement of the coils. The D. F. coils are now rotated until the signals reach their maximum intensity. It

will be found that this point can be only roughly judged to 10 degrees or 15 degrees.

If the coils are fixed, then the whole machine must be rotated.

Having obtained the rough-bearing switch over to the "two-coil" position, if the balancing coils have been correctly set, retuning should be unnecessary. Now the reversing switch is operated, and it will be noticed that signals are louder upon one side than the other; turn the D. F. coils until upon the reversal of this switch no change in strength of signals is observed. As a check, throw change-over switch to "one-coil" position; the signals should be of the same intensity. The bearing is now accurately found; a change of 1 degree will usually give a distinct difference in signal strength when the reversing switch is operated.

Whenever a bearing is being taken, either with fixed or revolving coils, the compass reading must be taken *immediately* a balance is obtained. In the first case this is sufficient data for the navigator, who applies correction for variation and deviation. In the second case, the compass reading and the D. F. coil scale bearing are required by the navigator, who must correct for variation, deviation, and quadrantal errors of the D. F. coil.

The quadrantal errors of the D. F. are due to the wireless waves being deflected by the metal of the machines and by refraction of the waves in direction.

The rotating coil does not therefore point toward the true position of the W/T beacon station, but only in its apparent direction, and the error varies as the angle between the direction of the incoming wave and the fore and aft line of the machine is altered.

Although the coil will turn through only about 100 degrees, the table of quadrantal error corrections is given for 360 degrees. The reason for this is that, although as mentioned above, only the line along which the signals are arriving is determined by the coils, the quadrantal error correction will, of course, vary according to whether the transmitting station is ahead or astern.

The method of taking a bearing is as follows:

(*a*) Obtain the scale reading as described above.

(*b*) Note whether a "head bearing" or "tail bearing" from approximate D.R. position.

(*c*) If a head bearing, apply the quadrantal error correction direct; if a tail bearing, subtract the reading from 180 degrees and change the color before applying the correction.

(*d*) Correct compass reading for variation and deviation.

(*e*) If a "red" reading, subtract it from the direction of machines head true; if a "green" reading, add to direction of machines head true. The result is the true great circle bearing of the station.

Quadrantal Errors and How Obtained.

According to Chandler, quadrantal error depends upon two causes: First, that which is known as "screening" due to the wireless waves being deflected by the metal of the machine, and, second, by refraction of the waves in direction caused by the sun, and varies from day to day, and is called locally "daily variation"; sometimes this is as much as 4 degrees.

To swing for quadrantal error, a transmitting station is selected which will send for at least 20 minutes.

The machine is taken to an open space on the aerodrome about 100 yards from the nearest building.

With the machine stationary, a bearing is obtained on the transmitting station. The machine is then turned through 10 to 20 degrees, another bearing taken, and so on through 360 degrees.

When working out the errors care must be taken to see whether the wireless wave comes in on the port side or the starboard side of the machine.

Knowing the true bearing of the transmitting station and the bearings given by D. F., then naturally the difference between them gives the quadrantal error for the particular bearing. The data obtained from swinging the machine is then used to plot a curve of quadrantal corrections. This curve is then pasted on the back of the compass deviation card, and hung up in the navigator's cockpit, so that they are quickly available when needed.

All the *F–5* type seaplanes at the R. A. F. Aerial Navigation School are equipped with the movable coils described above, and in all navigational flights the students are seldom more than a degree out in their bearings taken on Paris, Poldhu, and other beacon stations.

The disadvantage of this type set is the fact that C. W. transmitting stations can not be used, since the higher note is oftentimes mistaken for the maximum signal; however, as used with spark stations very accurate results are obtained.

Of course the bearing of the station as obtained is the great circle bearing, and if it is to be laid off on the Mercator Chart, then it must be converted to a mercatorial bearing by applying the Conversion Angle. This is obtained in practice from the formula.

Conversion angle equals one-half difference longitude X since middle latitude, which is sufficiently accurate for practical purposes.

This same type of set has been installed in the rigid airship *R–32* for experimental purposes, but has not proved satisfactory, for the obvious reason that the ship has never been "swung" for quadrantal error, which of course is rather difficult for a ship of that size.

INTRODUCTION OF RADIO TELEPHONE AND COMPASS AND GYRO COMPASS INTO JAPANESE NAVY.

(3526)

Source: Reliable. **24 December, 1920.**

1. It is said that the major ships of the First Squadron have the Sperry gyro compass. The major ships of the Second and Third Squadrons are not yet provided with this compass.

2. The five submarines that accompanied the First and Second Squadrons and took part in the summer maneuvers (1920) are provided with Sperry gyro compasses.

3. The *Yamashiro* (First Squadron) in reserve at Yokosuka, had no gyro compass and no radio compass or radio telephone.

4. The major ships of only the First and Second Squadrons are provided with radio telephones.

5. It is stated that the Tokyo Naval Arsenal is manufacturing small radio telegraph and radio telephone sets that are issued to naval flying machines, and already in use by them. These Japanese sets may have been in use in the four aeroplanes that accompanied the First and Second Squadrons on the recent cruise to the northern part of the Sea of Japan. These sets have a maximum range of 10 miles. The same set is used for telephone and telegraph.

6. Wireless telephones are installed in the major ships of the First and Second Squadrons. Though a few of the first radio telephones and installations were bought abroad, the entire equipment is now being manufactured in Japan.

7. It has been stated that $25,000 worth of radio telephones were ordered from the United States (Western Electric Co.) in February, 1920, for the Japanese Navy.

8. Ten radio compasses ordered from New York were received about 1 December, 1920. One is now at the Naval Arsenal, Tokyo, for examination and test and study, prior to these compasses being installed on board the major vessels of the First and Second Squadrons.

9. This naval arsenal manufactures optical glass, but is so far successful only with small diameters, such as are used in the manufacture of their own binoculars and telescopes.

10. Range finders are still bought abroad, from Barr and Stroud. Not yet manufactured in Japan.

11. All submarines are to be equipped with gyro compasses. No destroyers or light cruisers are being equipped with them.

JAPAN, WIRELESS PLANT.

(12526)

Source: "Press." **24 November, 1920.**

1. "The big wireless station covering 20,000 Tsubo, under construction by the department of communications in Haranomachi, Fukushima-ken, will be completed and ready for service in October. The generating plant and office buildings are completed and the steel framed concrete wireless pole to measure 600 feet has been finished as high as 500 feet. A 400-kilowatt generator and other machines being manufactured in the Shibaura Works in Tokyo will make possible transmission halfway around the earth. When completed the station will rank second or third greatest in the world.

2. "The large receiving station in Tomioka, 5 miles from Haranomachi, was opened in March last, where messages sent by the great Nauen station in Germany are received.

3. "On August 24 a message sent from the Nauen station to Buenos Aires, containing the day's news about the war in Poland and conditions in Germany, was heard plainly."

ORDNANCE.

DECOPPERING OF GUNS.

Source: Reliable.

(10598)

6 December, 1920.

The presence of copper fouling will be detected either as a contraction by the result of measurements taken to test for contraction of the bore, or by visual appearance of the bore itself and of the gutta percha impressions, which latter present a rough appearance peculiar to coppering.

Chemical Method of Decoppering Bores of Guns.

The bore of the gun must be cleaned out thoroughly with soda and pure water; if the bore is very dirty and greasy, a good wash-out with paraffin before the application of the soda and water is preferable. Dry the bore and examine to see that all grease has been removed, then seal the ends of the bore by means of the following apparatus:

The muzzle of the gun is sealed by a wooden plug with a flange to engage the muzzle face in conjunction with a rubber ring, the plug and rubber being held in position by a pair of clamps round the small diameter of the muzzle swell. Two bolts passing through the clamps engage a plate across the muzzle plug and nuts screwed on the bolts complete the operation at the muzzle.

In cases where the liquid is required again a tap is used so that the liquid can be collected in a barrel or other receptacle.

The agitator consists of a light rod or tubing and wooden disks slightly smaller than the bore and having holes or clearances through which the liquid may pass. The disks are secured at intervals to the rod by a small pin on either side of the disks and a tee piece to facilitate handling.

The breech end is secured by a wooden plug and rubber ring held in position by two screws working through a plate machined to fit the breech-opening threads, the wooden plug and plate having a hole for the agitating rod to pass through. They must be put on the rod before the tee piece is screwed on.

For filling.—The mixing vessel should be above the height of the breech and the mixture allowed to flow into the gun from a tube, failing which a gutter or long scoop may be used and the mixture manhandled by buckets. The scoop should go well into the chamber.

The solution to be used is made by mixing together ingredients in the following proportions:

Ammonia 0.880, 1 pint.....
Ammonia persulphate, 10½ ounces..
} Clean water added to make 1 gallon.

By calculation the exact amount of liquid required can be easily ascertained and the proportionate quantities of water, persulphate, and ammonia prepared. Fill the mixing vessel with the required amount of water, then add the persulphate, stirring briskly all the while, and on account of the vapor rising, add the ammonia just previous to being ready to fill. Continue stirring the liquid.

NOTE.—Naked lights should be kept from the vapor and no smoking allowed.

Depress muzzle 7 per cent.

Method of procedure with mixing vessel above the breech.—Fix muzzle plug and insert agitator, meanwhile the liquid may be prepared, fix breech plug, connect mixing vessel to agitator tube by rubber tube or funnel, open tap and allow liquid to flow into gun and when full remove connection and screw on tee piece for agitating.

The liquid should remain in the bore 48 hours, being agitated for about 5 minutes every half hour.

Grayness and Cordite Stains in Bore of After-Proof Guns.

When the above is observed in the bore of a gun after proof, a thorough cleaning with paraffin oil mops is given. Should there be a coating of copper locally on the lands, this is removed by a hand lap and every care taken not to enlarge the bore above "before proof" size.

RANGE FINDERS.

Source: Reliable.

(13092)

14 December, 1920.

100-Foot Range Finders.

The Barr & Stroud Co. have completed a 100-foot experimental range finder, which is installed in the open at their plant. They claim very remarkable results from this instrument. At the present moment it is supported by eight sleeve supports, which are in turn connected to four cantilever pedestals. The supporting members of the mount are in tension and are capable of adjustment by means of turnbuckles. The instrument itself is pivoted on a central pedestal and is covered with canvas. A small house at the center of the instrument has been built for the observer. The instrument has a total weight of 14 tons and is trained by Janney Williams gear, operating a Hele-Shaw clutch coupling. Special gear is fitted to take up the backlash. This instrument cost $10,000, but it is estimated that later ones would be not quite so expensive. The instrument is a triple telescope with a 60° elevation for theoretical firing against

aircraft. It has a desiccating arrangement for either hot or cold air, so that within certain limits the temperature in the tube can be regulated. They claim that this point is not so important and that the instrument has been tested with wide variations of temperature. The instrument is fitted with 4½-inch pentagon prisms similar to those found in the 30-foot range finder. They believe that a 100-foot instrument is not necessary and that in future possibly a 70-foot or 75-foot range finder will produce quite as accurate results.

They have checked this instrument very thoroughly and have obtained a theoretical accuracy of 1 yard at a range of 6,000 yards and of about 18 yards at 30,000 yards. They claim also that this instrument is even more accurate than the eye. They were very much pleased with the results obtained, as shown by their curves and analyses, and are quite satisfied with them. This instrument was built for the army for coast defense, and is to be installed on the Isle of Wight for a thorough test.

Antiaircraft Range Finders.

The Barr & Stroud Co. have apparently experimented to great length with stereoscopic antiaircraft range finders. Their final opinion is that any stereoscopic range finder is much inferior to that of the coincidence type; in fact, only half as accurate. This opinion was not formed until after very exhaustive experiments and tests. In fact, they claim that the Germans at the end of the war had given up stereoscopic range finders and were producing coincidence type. It is reported that the *Derflinger*, in the battle of Jutland, was fitted with coincidence type range finders. It is stated that the Germans, after two years of war, decided on the coincidence type. The usual type of antiaircraft range finder which Barr & Stroud are now turning out is 12 feet in length. They require four men to man each one of these range finders—namely, one man to take the range and elevation; second, pendulum keeper; third, trainer; fourth, reader and transmitter. These range finders are fitted with gears which permit of obtaining the height as well as the range. However, the range remains automatic at any given height. The eyepieces to these range finders are arranged similarly to the telescopes on our antiaircraft guns. In other words, the operator looks down in order to obtain direct vision on the horizon. As the instrument is raised, the eyes are raised until, when the instrument is pointed at 90°, the eyes are directed toward the horizon.

The German make vertical range finders. Two quite modern ones are made and are now in service.

Relative to equipping aeroplanes with range finders for use against aeroplanes, Barr & Stroud are of the opinion that very little success can be anticipated with the present instruments. The motion

encountered, the unstable platform, and the relatively small field operate to the disadvantage of such equipment. However, they have made an 80-centimeter range finder for this purpose, and will continue experiments.

A number of 30-foot range finders were on the floor of the shops, having just finished their final inspection. These have been manufactured for a foreign power. Some of them were turret range finders and fitted with a simple training gear leading to a station underneath the instrument. The operator thus took up his station about 6 feet directly below the instrument. The periscope is fitted to the instrument for the use of the trainer. This appeared to be common to most of their latest range finders. It was noticed that the eye buffers were hollow and capable of being filled with air by means of small tubes about 1 foot in length; adjustment to suit the individual taste could thus be readily made.

GENERAL NOTES.

Source: Reliable.

(13826)

14 December, 1920.

In conversation with an expert of the Barr & Stroud Co., who has also had considerable experience in Germany, both before the war and after, it was learned that, in his opinion, the German fire control and also gunfire were inferior to that of the English in the Battle of Jutland. He claims that all reports to the contrary are not correct. He stated further that, at the time of the Battle of Jutland, the Germans had only director gear in train and not in elevation; that at the end of the war the *Baden* and *Bayern* may have had experimental gear tending to more advanced ideas in fire control, but that at the Battle of Jutland certainly none of the ships had anything as good as the English. As far as is known, they did not have anything at any time similar to the Henderson gear. The Germans apparently used binocular periscopes entirely, which this optical engineer greatly admired. He stated that the Germans depended very largely on absolute perfection in training personnel for accuracy. It would appear that the methods of discipline in the German Navy would permit of driving the personnel to unusual limits in this respect. Broadside guns and searchlights were controlled and trained by a follow-the-pointer system which was common to both.

He stated that Commander Haase was not the gunnery officer of the *Derfflinger* but had a gunnery position considerably inferior to that of the gunnery officer; that Commander Haase wrote his experience on the *Derfflinger* for the purpose of obtaining money, of which he was badly in need. He stated that the descriptions

given by Commander Haase in his book are not quite true as to facts and are rather anticipatory as to equipments and methods.

It appears that Barr & Stroud are building a gun director for the Swedish Government which has direct connection with the gun, and they stated that their next step will be to connect up the gun and elevate it by the director. They have definite ideas along this line and expect results.

It appears that the Goerz Co. were of greater value to the German Government during the war than Zeiss and many other up-to-date plants. Goerz are said to have done magnificent work and employed a total of 14,000 workmen, concentrating on the manufacture of large searchlights.

MISCELLANEOUS ORDNANCE AND CONSTRUCTION ITEMS.

Source: Reliable.

(125)

24 December, 1920.

1. There is no system of auxiliary lighting in the magazines.

2. All turret ammunition is hoisted by hydraulically operated cars. There is no provision for hand loading. This is true even in the latest installations.

3. All turret operating gear is hydraulically run. This includes rammers, turret training and gun elevating motors, breech plugs, etc. No provision is made for hand ramming.

4. The *Kaga* and *Tosa* are to be approximately 43,500 tons displacement, the armament (eight 16-inch guns) will probably not be increased. The increase in tonnage (9,700 tons) over the *Mutsu* and *Nagato* they claimed was being put in more protection.

5. The construction of these ships as regards double bottoms and water-tight compartments, it is said will be along prewar lines.

FIRE CONTROL EQUIPMENT, JAPANESE NAVY.

Source: Reliable.

(402)

24 December, 1920.

Practically all fire control equipment for the Japanese Navy comes from England. This includes range finders, range clocks, director-scopes, telescopic sights, etc.

The Japanese are especially clever at copying all electrical installations and equipment, but are especially poor in all optical work.

An expert demonstrating a range finder to Japanese naval officers, it is said, made the following statement:

It was well-nigh impossible to explain the instrument so as to make them understand its use. They didn't seem to know when the images were in coincidence. Couldn't read the range at all accurately. Their eyes seemed bad. Apparently they have no optical judgment.

A NEW NAVAL GUN.

Source: "Press."

(2261)

22 December, 1920.

The following is a translation of dispatch which recently appeared in a local paper:

The navy department of France has recently arranged for the construction of two guns, far superior in power to those in use at present on our ships. They are of 450 mm. caliber, and their length, which is 45 calibers, exceeds 20 meters. Each gun weighs about 150 tons, which is more than double the weight of the 340 mm. guns.

The budget for 1920 provides for the construction of these guns a credit of 1,750,000 francs, and new credits have been asked for in the budget for 1921.

MANUFACTURE OF MINES IN JAPAN.

Source: Reliable.

(12489)

24 December, 1920.

The Japanese Navy is manufacturing mines at Yokosuka Naval Station. They have sample American, British, French, German, and Italian mines—the types used in the World War. They have samples of the American and British mines used in the North Sea barrage.

It is believed that their largest stowage place for assembled naval mines is at Amami O-Shima Island in the Loo Choo group.

TORPEDOES; SPEED OF SHIPS FIRING FROM SUBMERGED TUBES.

Source: Reliable.

(13734)

29 November, 1920.

The Italian capital ships are equipped with lateral submerged tubes of the Armstrong type, capable of launching a torpedo at a speed of 20–21 miles per hour.

The large Italian ships do not have above-water tubes.

Miles per hour as used above refers to miles and not knots.

ENGINEERING.

DEVELOPMENT OF JUNKERS ENGINES FOR AIRCRAFT. (A FREE TRANSLATION.)

Source: Reliable.

9 December, 1920.

Introduction.

(1) Reasons for selecting the Junkers two-cycle engine for a light-weight motor.
(2) Plan for development of double-piston light motor for oil burning.
(3) Progress of research.

Before the War:

(*a*) General.
(*b*) Solid injection.
(*c*) Cooling.
(*d*) Various.
(*e*) Summary of experimental results.

During the War:

(*a*) Construction of experimental Motor. (Explosion type.)
(*b*) Description of completed experimental motor.
(*c*) Summary of experimental results of this type.

After the War:

(*a*) General.
(*b*) Solid injection.
(*c*) Cooling.
(*d*) Various.

(4) Summary of experiences up to date and possibilities for future development of large light-weight motors for oil burning.

Conclusions. Junkers Light Motors for Large Powers.

Introduction.

The development before the war of light motors in the various fields of automobile industry, airships, fast motor boats, warships, etc., showed the possibilities of development of a lighter motor of great power. But similar difficulties, to those which have been experienced in the development of heavy motors for large powers were found to exist in the case of development of light motors for large powers.

An important viewpoint kept in mind by Prof. Junkers since his development of the double-piston oil motors for self ignition, was the fact that his motor was particularly suitable for development as a large powered motor. It was also about to be proved whether or not his double-piston system of oil motor could not lend itself to easy conversion into a light motor of large power.

Prof. Junkers had begun, for some time previous to the war, to make theoretical studies and research combined with practical studies of this problem.

At this time the principle question of light motors was the one of explosion processes. Even at that time the great danger which lay in the application of an easily exploded fuel of light specific gravity was well known, and was brought to the front, particularly in time of war, as a result of the many accidents. This resulted in arousing intense interest for the problem now shown to be of great importance, viz, the construction of a light motor able to use a heavy nonexplosive fuel.

After the end of the war these requirements were of still greater importance for commercial practice and particularly the security of life and material in airships and therefore diminishing risk and cost of civil aviation. For this reason the development of a light motor, using a heavy fuel oil, has become very urgent.

Prof. Junkers appreciated the importance of this point from the very beginning and this is brought out by his systematic development of his motors with this end in view.

In General, Why is the Junkers Two-Cycle Motor Favorable for Development as a Light Motor.

With the two-cycle system having twice the number of impulses on the piston, greater power is developed than with the four-cycle. Assuming equal mean effective pressures in the working cylinders, the two-cycle engine, for equal power, will have a lighter weight than the four-cylinder engine, even considering the addition of the necessary compressors.

This advantage of the two-cycle system is offset to some extent by the fact that the two-cycle motor requires greater cooling to take care of the larger amount of heat utilized in the same time. In the case of the Junkers motors, however, these relations are more favorable than with the normal two-cycle motor owing to the absence of the cylinder heads with their valves, the better arrangement of cylinders, etc.

Absence of Valves.

With the usual single piston motor (four- or two-cycle) with cylinder heads and valves, there are great difficulties to be overcome in the development of greater powers, due to the necessity for larger diameter of valve, etc., together with the necessity for controlling high air velocities. Also the inertia of the valves are sources of difficulty. Both of the above had already influenced the constructive development of the whole engine. On account of the high eddy losses in the valves, the specific power of the engine was diminished.

All of these difficulties are avoided in the Junkers motor by the use of the exhaust slits which make possible a good scavenging with

small expenditure of power. This construction without valves, as developed by Prof. Junkers, permits a construction combining certainty of operation with high power in each cylinder and relatively small weight.

Cylinder Arrangement.

With the assumption of equal cylinder diameter and equal stroke, the double-piston engine will have half the piston speed of the single piston engine, vice versa, with equal piston speeds and the same bore and stroke ratio, the two, or double-piston engine can be made twice as large. This results in a favorable form of cylinder, while the clearance volume will have the smallest possible surface. The heat conduction is hereby diminished at the dead point and vice versa the results are higher specific powers of the cylinders.

The favorable stroke relations give the cylinder of the double-piston engine the form of a long drawn out tube which permits more favorable scavenging of the cylinders with fresh air from the intake slits on one end of the cylinder to the exhaust slits on the other end. This results in a further increase in the power and a decrease in the weight.

Dynamic Effect.

With the usual one-piston motor the pressure in the cylinder is exerted on one hand on the piston, and on the other hand on the cylinder head which must then be taken up by the engine framing.

All these parts upon which these forces are working must therefore be made strong and heavy; and as they are usually manufactured of cast material, they are not favorable for resisting tension.

With the double-piston engine these forces are acting upon both pistons only, which in turn transmit the power through the connecting rod to the crank shaft and since these parts can be made of material which will resist tension they can be made relatively light.

Balancing of the Masses.

One important advantage of this construction lies in the balancing of forces made possible by the opposed pistons, which in combination with more favorable scavenging arrangements, using high pressures, permits a higher piston speed to be developed with a resulting decrease in weight.

Plan for Development of Double-Piston Light Motor for Heavy Oil.

After it was determined that the Junker system was favorably arranged for a development into high powers with light weight the next question to be proven was the question as to which type of combustion was to be used, explosion or the self ignition (spark ignition or temperature ignition). From a technical standpoint the investigation of this problem was put on the broadest basis and the aim to be accomplished was determined on. This purpose was the

construction of a cheap motor with reliability of operation. It was the question then if the Junkers light motor was more favorable for this purpose than the already developed types of "spark plug" types. This question led to others, among which were whether or not further measures were necessary and other problems to be solved before a decrease in weight could be made possible.

In the first place it appeared to be possible to further develop some of the engine parts which, with the temperature ignition engine, had become very complicated and added to the weight. Such measures as the following were considered: Doing away with air compressors by using a solid injection; abandoning the heavy and complicated cooling system, and the development of a special scavenging system.

Aside from these main problems there were a large number of small detailed questions.

In order that the fundamental theory of Prof. Junkers might be thoroughly investigated this research work was carried out in detail before any attempt was made to construct the completed engine.

Progress of Research—Before the War.

General.—The carrying out of the necessary research was done, partly by means of the research apparatus already on hand, and partly by entirely new apparatus. To this belonged, among other things, a compressor for very high pressures, a special arrangement to permit the personnel to observe the scavenging processes, an apparatus to measure the weight of air, two high-speed double-piston motors specially constructed for research, one connected to a piston air compressor, one machine arranged for systematic investigation of scavenging processes.

Solid injection.—In order to determine the power requirements for fuel injection and scavenging, careful measurements were made of weight of air required for these purposes. By means of the special apparatus for witnessing the scavenging processes a specially constructed nozzle was used which discharged into the air. After the discharge had been properly regulated, the nozzle was arranged to spray into the engine. As a result of this knowledge that the atomization of the fuel oil could be carried out by means of fluid pressure alone, the next investigations were made in the line of development of a fuel-oil pump which would be reliable in operation. In this connection it was necessary to take into account the compressibility of the fluid and the bending of the oil pipes. The economy of operation was determined by numerable indicator diagrams, which were taken at high speeds by means of a so-called micro-indicator, and an analysis of the exhaust gases by means of the Orsat apparatus.

Various.—As an extension of previous research work the problem of cylinder and piston cooling was further studied with the help of

thermo-electric measuring devices. At the same time experiments were made with injection of water into the cylinders. In connection with the above, research work was also undertaken to permit a choice to be made between the various cooling methods (?) for piston cooling.

The next problem to be investigated was the question of scavenging air pressure as influenced by the higher r. p. m.

During the War—Construction of Explosion Motor as Intermediate Step.

Before the beginning of the war the airship constructors and the Navy had begun to increase their requirements for larger units combined with light weight. It was apparent that the problem for solution in the case of a heavy oil motor would require considerable time. It was recognized, on the other hand, that the application of the explosion principle (spark plug ignition) as applied to the double piston motor of Prof. Junkers would lead to results as good as those obtained by other types of motors.

Prof. Junkers chose the horizontal type of cylinder arrangement because his knowledge, gained in the field of aerodynamics, showed him the necessity for a motor of small height.

Description of the Completed Experimental Motor.

The motors built at Dessau consisted of two completely constructed engines for aeroplanes and later six further developed engines for the Navy. At the end of the war there were still further orders from the military authorities for more developments for aeroplanes. These motors were constructed to develop 500 horsepower. A later important project for 1,000 horsepower was not fully developed owing to lack of personnel. The 500 horsepower engine showed the following construction:

It is constructed with opposed pistons, i. e., this means that two pistons move in each cylinder in opposite directions, and at the same time act as valves in uncovering the ports in the cylinders.

In the vicinity of the lower dead point one of these pistons uncovers the exhaust ports for the burned gases, while the other piston opens the ports for the admission of fresh scavenging air.

Six such cylinders lie parallel and close together. The pistons on one side of the cylinders act together on one common crank shaft. In order that the pistons may operate in a method diametrically opposed to each other and control the port openings at the proper moment, both crank shafts are connected together on the front side of the engine by means of gear wheels. At the front side of the engine there is placed a blower which furnishes pressure for the fresh scavenging air.

The power for this blower may be taken either from an extension on the crank shaft, or it may be driven by the central shaft, which

usually carries the propeller. This last arrangement has the advantage that the propeller shaft can be given the most favorable r. p. m. by proper choice of the gear ratios. The crank gears are carried in two castings which are located on either side of the engine. The gears are entirely inclosed and situated next to the blowers. Over all the cylinders there is further constructed a housing for conducting the fresh scavenging air to the cylinders and for taking off the exhaust gases. The housing for conducting the fresh air is connected directly to the blower case. The lubrication of the gears is accomplished by means of oil under pressure which is lead through the hollow crank shaft. The pistons are lubricated by means of the injection oil. The cylinders are covered throughout their entire length by a cooling jacket.

The pistons are cooled by a fluid-cooling system of a particular type known as the Junkers pendulum cooling, which obviates the necessity of leading the cooling medium into the piston.

(Translator's Note.—This particular system is not fully described in the original report, but from observation of Prof. Junkers's drawings on hand at Dessau, this cooling system was found to consist of a hollowed out core near the top of the piston which was filled with the fluid used as the cooling medium. The cooling medium was allowed to splash back and forth in this space and conduct the heat from the upper or hotter parts of the piston to the lower or cooler parts.)

The water necessary for the cylinder coolings is furnished by means of a centrifugal pump connected directly to the crank shaft,

The operating conditions in this cylinder were as follows: The fuel (benzine) was injected directly into the cylinder by means of a pump and through a special nozzle which was so arranged that a good mixture of air and fuel was obtained.

Toward the end of the compression the mixture was exploded by means of the usual spark plug.

Summary of Experimental Results.

The above-described motor showed a weight of 1.4 kilograms per horsepower. With quiet, smooth running a speed of 2,000 revolutions per minute was attained on a 10-hour test, and a power of 450 horsepower measured by water brake. The frames, cylinders, pistons, and gears operated without fault. Injection and cooling showed no troubles.

Owing to the nonlubricating property of benzine it was thought that difficulties might be expected with the fuel-oil pump, but the particular construction was such that the pump functioned without difficulty. It was then decided to attach this pump to a four-cycle gas engine in place of the carbureter, and on tests the experiment proved successful.

The principal difficulties in the research work lay with the function of the proper mixture and the ignition, owing to the greater tempera-

ture drop than in the normal engine. One must remember that the r. p. m. used here corresponds to a heat consumption of 4,000 units (B. t. u.?) per minute. The newly applied rotary blowers for air supply fully met all the demands.

Difficulties were experienced with the aluminum castings, which were not capable of meeting all of the demands made upon them, due in part to poor substitutes which had to be used during the war.

The armistice brought experiments with explosion motors to an end. The peace treaty prevented the complete construction of an engine combining the results of these experiments. Experiment and research showed good results.

After the War—General.

After the war Prof. Junkers continued the research and experimental work as applied to peace use (civil aviation) to develop a light high-powered motor, keeping in mind his original idea of holding back construction of a completed engine until the individual problems had all been investigated and solved. At the same time other requirements showed that the developments made to date were sufficient to begin construction on several new types of motors, particularly for fast motor boats and for stationary purposes.

Solid injection.—For the above-named engine types it was demonstrated that this method of fuel injection could function well for months at a time without showing trouble up to 700 revolutions per minute.

Cooling.—Experiments were made to determine whether or not better methods than the usual water cooling for cylinders could be developed for this light motor. These experiments have proved to date that even this novelty has shown with certainty that a considerable saving in weight may be obtained over all other aircraft motors and that it is fully applicable to the light oil motor.

Various.—As a result of previous research it was shown that the atomization (and mixture) had particular application to the high-speed engines. Also the thermo-electric measurements will be of great benefit to any new construction. It is necessary also that a testing laboratory cooperate in the testing of all material used in the construction of the engine.

Compilation of Experiences to Date and Possibilities of Further Development of Light Oil Motors Using Heavy Oil Fuel.

As a result of years of experiment and investigation Prof. Junkers has concluded in no case to complete the construction of an engine until all individual and fundamental problems have been thoroughly studied and solved. The previously described developments have shown how this has been carried out and but few deviations from this line of attack have been made even under pressure of war emergencies.

As a summary of results, the following is given:

The best construction of framing, cranks, and gears may be considered as completely solved for practical purposes. The problems of solid injection and cooling may also be considered fully closed up.

As a result of these experiences it may be assumed with certainty that engines up to 2,000 horsepower without encountering fundamental difficulties.

The manner of obtaining air pressure for scavenging can not be considered as a problem, but is merely a question of applicability.

That the solution does not present any difficulties has been shown by experience.

Before beginning the construction of the light oil engine several individual problems remain to be solved.

Since the light oil engine requires the development of great power for specific cylinder volume, it was necessary to carry out developments of solid injection beyond the usual limits of 700 revolutions per minute.

The problem of starting, which in the case of the explosion motor presents no particular difficulties, required a special solution and further investigation. There came in question, auxiliary air, explosion of mixture, and starting motor.

The solution of the individual construction problems were carried out by the building of the engine.

Preparatory constructive work has shown that this engine is particularly favorable as regards space, as shown by the study of arrangements (of cylinders, etc.).

All in all the experience has shown that we are now ready to complete the engine, not as an experimental type, but as a preliminary type to quantity production.

As the engineers of Prof. Junkers are engaged on other problems the question of the time required to complete this problem will depend on its relative importance in comparison to the other problems on hand.

There is further the question of technical assistance and material available to be considered. If material and financial assistance is available the problem may be fully carried out in a very short time (may be expedited).

LUBRICATING OILS—AERO ENGINE LUBRICATION, BRITISH.

Source: Reliable.

(13819.)

29 December, 1920.

USE OF BLENDED MINERAL AND CASTOR OIL, PURE PHARMACEUTICAL CASTOR OR HEAT-TREATED CASTOR OIL—STATIONARY ENGINES, TWO OILS, MINERAL THICK AND MINERAL THIN—LATTER PRACTICE UNDER REVISION.

The service practice in the past has been to use either a proprietary brand of blended mineral and castor oil, pure pharmaceutical castor, or heat-treated castor oil for such rotary and radial engines as is necessary.

With regard to stationary engines, two oils have been used, namely, mineral thick and mineral thin, these latter oils being mixed in such proportions as are necessary in accordance with the temperature requirements for the period of the year concerned.

This practice is at the moment under revision, and as far as rotary and radial engines are concerned, the blended oil in question has been eliminated, and either pure pharmaceutical castor or heat-treated castor will be used. In place of the thick and thin mineral oils, it has been decided to adopt a summer grade and winter grade mineral oil to eliminate the obnoxious practice of having to mix such oils in the field.

CONSTRUCTION AND REPAIR.

SHORES FOR BULKHEADS—BRITISH PRACTICE.

Source: Reliable.

(10005.)

23 December, 1920.

INFORMATION RELATIVE TO BRITISH PRACTICE WITH REGARD TO ADJUSTABLE STEEL SHORES, SUPPLY OF WOODEN SHORES, ETC.—STEEL SHORES OF THIS CHARACTER NOT USED AND NOT CONSIDERED ESSENTIAL.

The question of supplying adjustable shores for emergency shores on board ship was recently discussed with Admiralty representatives, and the following information is submitted relative to British practice:

(*a*) Adjustable steel shores were not issued by the Admiralty.

(*b*) The Admiralty does not contemplate or recommend the use of special types of adjustable shores.

(*c*) The Admiralty attitude with regard to this matter is to the general effect that bulkheads, decks, etc., should be properly stiffened and shored up during the construction of the ship, and only in very special cases would an adjustable shore or a temporary shore of any kind be used.

(*d*) Among other objections noted is the fact that such adjustable or temporary shores are seldom in position when needed, which I believe confirms the experience in our own service.

(*e*) During the war there was a demand for wooden shores of assorted lengths, and a small number of these were issued for emergency use. In other cases, where an assortment of shores was not issued, the quantity of lumber carried was augmented in order that the material might be available for emergency use. At the present time, however, it is not standard practice for British vessels to carry these shores, and the quantity of lumber carried on board has been materially reduced.

(*f*) Investigation brought out the fact that during the war requests were submitted from British vessels for a large quantity of shores for use as horizontal shores between bulkheads. These requests were disapproved, with the explanation that such shores would not only not serve a useful purpose, particularly in case of explosion, but would transmit to interior bulkheads the pressures against the exterior bulkheads, and therefore would be more of a menace than a safeguard.

(*g*) The Admiralty has not issued special slip joint shores and steel fittings similar to those tried out on the destroyer *Fairfax*, nor do they contemplate any such issue.

CONSTRUCTION OF SUBMARINES IN JAPAN.

Source: Reliable.

(6452.)

24 December, 1920.

Submarines now building at Kure and other places are what are called medium size submarines of 800 or 900 tons surface displacement; but in the future the sphere of activities of submarines will be more and more enlarged, and consequently they must have a cruising radius of at least 5,000 miles. In this respect, medium-sized submarines are not sufficient, and it is reported that the naval authorities have decided to build large size submarines of about 1,500 tons surface and 2,000 tons submerged displacement. The Kure Navy Yard is now collecting necessary materials, and probably a number of such submarines will be built in the next fiscal year.

Referring to the above, a person who is well informed on the subject says:

Of course, medium size submarines are sufficient at the present, but it has been decided to build large size submarines having greater cruising radius, presupposing enlargement of sphere of their activities in the future. How many submarines will be attached to a fleet of 8 and 8 ships I am not at liberty to tell, but it is certain that a number of them will be assigned thereto. At present we have no experience in handling large size submarines, and their value in active operation is a question. A submarine which displaces 2,000 tons submerged will, on account of its big size, lose much of its function as a submarine, and in our country submerged cruisers or submerged battleships will probably not become a fact for some time yet.

JAPAN—NAVAL CONSTRUCTION.

Source: "Press."

(9324.)

26 November, 1920.

1. The navy department has placed the following construction contracts in accordance with the recent approval of the Diet to the new "eight-and-eight" program:

Cruisers.

The *Ayase* and *Yura* to be built at the Sasebo Navy Yard; *Minase* at the Uraga Dockyard, and the *Otonase* at the Mitsubishi Works.

First-Class Destroyers.

Mokaze, Tsumujikaze, and *Okaze* at the Maidzuru Navy Yard; *Numakaze* at the Uraga Dockyard; *Namikaze, Suzukase,* and the *Soyokaze* at the Mitsubishi Works.

Second-Class Destroyers.

Hagi, Hishi, Kasu, Ayame, and *Botan* at the Uraga Dockyard; *Tsuta, Ashi, Mikyo, Karukaya,* and the *Yuri* at the Kawasaki Dockyard; *Sumire, Yoyogi, Kakitsubata, Tsutsuji, Kaido,* and the *Bashi* at the Ishikawajima Shipyard; *Warabi, Tadi, Ajisai, Shion,* and the *Nadeshiko* at the Fujinagata Shipyards.

COMPLETION OF "NAGATO."

Source: Reliable.

(6797.)

26 December, 1920.

The superdreadnaught *Nagato*, completing at the Kure Navy Yard, has been completed.

On 23 November the ship will leave for Bungo Channel to carry out broadside salvo firing and steaming trials, and on the 25th will be delivered to the navy.

The *Nagato* will be commissioned on 1 December as the flagship of the First Squadron, under the command of Admiral Tochinai, and on the 13th of December will be brought to Yokosuka, to which station she will be attached.

THE BATTLE CRUISERS "AKAGI" AND "AMAGI."

Source: Reliable.

(11966.)

24 December, 1920.

The keel of the battle cruiser *Akaki* was laid at the Kure Shipyard on 6 December.

This will not be completed for about 10 months, but it is considered sufficiently advanced to warrant the laying the keel with safety.

The keel of the battle cruiser *Amagi* was laid at Yokosuka on 16 December, 1920.

LIGHT CRUISER "KISO."

Source: Reliable.

(12875.)

24 December, 1920.

The light cruiser *Kiso*, 5,500 tons, building at the Mitsubishi Dockyard, Nagasaki, was launched on 14 December.

Dates for completion of vessels.

BATTLESHIPS.

Tennessee	New York	Ap. Mar. 15.	Michigan	Philadelphia	Ready.
Connecticut	Philadelphia	Indefinite.	South Carolina	do	Do.

CRUISERS AND GUNBOATS.

Chester (res.)	Boston	Indefinite.	Charlotte [1]	Puget Sound	Indefinite.
Galveston	do	Do.	Missoula [1]	do	Do.
Sacramento	Charleston	Feb. 15.	Seattle [1]	do	Do.

DESTROYERS AND DESTROYER TENDERS.

Taylor	Portsmouth	Jan. 22.	Flusser	Charleston	Indefinite.
Israel	do	Jan. 25.	Champlin (docking)	Mare Island	Jan. 31.
Ringgold	do	Feb. 15.	Crane (docking)	do	Do.
McKee	do	Indefinite.	Greene (docking)	do	Do.
Robinson	do	Do.	Palmer (docking)	do	Do.
Stevens	do	Do.	Schley (docking)	do	Do.
Colhoun	do	Do.	Shubrick (docking)	do	Do.
Kimberly	Boston	Apr. 15.	Williams (docking)	do	Do.
Luce	do	Apr. 30.	Buffalo (tender)	do	Feb. 29.
Conyngham	do	Indefinite.	Babbitt	do	Indefinite.
Meredith	do	Do.	Badger	do	Do.
Childs	New York	Feb. 1.	Bailey	do	Do.
O'Brien	do	Feb. 12.	Chauncey	do	Do.
Maddox	do	Feb. 16.	De Long	do	Do.
Abbot	do	Indefinite.	Jacob Jones	do	Do.
Sampson	do	Do.	McLeish	do	Do.
Craven	Philadelphia	Jan. 29.	Ludlow	do	Do.
Winslow	do	Do.	Sloat	do	Do.
Dixie (tender)	do	Apr. 1.	Swasey	do	Do.
Ford (fitting out)	do	Ready.	Twiggs	do	Do.
Pillsbury (fitting out)	do	Do.	Ward	do	Do.
Cummings	do	Indefinite.	Yarborough (fitting out).	do	Do.
Ericsson	do	Do.			
Goff (fitting out)	do	Do.	Edwards	Puget Sound	Jan. 22.
Sigourney	do	Do.	Rathburne	do	Ready.
Wainwright	do	Do.	Roper	do	Do.
Clemson	Norfolk	Jan. 22.	Aulick	do	Indefinite.
Branch (fitting out)	do	Jan. 25.	Delphy	do	Do.
A. P. Upshur (fitting out).	do	Do.	Gillis	do	Do.
			Hogan	do	Do.
Benham	do	Indefinite.	Howard	do	Do.
Downes	do	Do.	MacKenzie	do	Do.
Duncan	do	Do.	McDermut	do	Do.
Parker	do	Do.	O'Bannon	do	Do.
W. C. Wood (fitting out).	do	Do.	Renshaw	do	Do.
			Stansbury	do	Do.
Belknap	Charleston	Ready.	Turner	do	Do.
Rodgers	do	Do.	Welles	do	Do.
Breckinridge	do	Indefinite.			

SUBMARINES AND SUBMARINE TENDERS.

S-2	Portsmouth	Apr. 16.	T-1	Norfolk	Indefinite.
S-9	do	Mar. 1.	Camden	do	Apr. 1.
S-16	do	Indefinite.	R-1, 2, 3, 4, 5, 6, 7, 8, 9, 10.	do	Do.
Savannah	Boston	Apr. 1.			
K-1, 2, 3, 4, 5, 6	Philadelphia	Jan. 29.	Bushnell	do	Mar. 1.
N-4, 5, 6	do	Mar. 12.	Alert	Mare Island	Indefinite
Fulton	do	Indefinite.	F-2, 3	do	Do.
T-3	Norfolk	Feb. 15.	H-2, 5	do	Do.

FLEET TENDERS (TRAIN).

Rappahannock (res.)	Portsmouth	Indefinite.	Maumee	Charleston	Indefinite.
Robin	New York	Feb. 7.	Teal	do	Do.
Culgoa	do	Feb. 12.	Widgeon	do	Do.
Lebanon	Norfolk	Do.	Comfort (Ord.)	Mare Island	Do.
Relief	Philadelphia	Jan. 29.	Swallow	Puget Sound	Jan. 31.

[1] To be placed out of commission.

Dates for completion of Vessels—Continued.

MINE FORCE.

Auk	Portsmouth	Indefinite.	Osprey	Portsmouth	Indefinite.
Cormorant (res.)	do	Feb. 1.	Curlew	do	Do.
Woodcock	do	Do.	Oriole	Mare Island	Do.
Flamingo	do	Indefinite.	Pigeon	do	Do.

AIR FORCE.

Langley	Norfolk	Indefinite.			

MISCELLANEOUS.

Patuxent	Boston	Indefinite.	Water Barge	No. 31 Chaston	Feb. 10.
Aramis	New York	Do.	Potomac	New Orleans	Indefinite.
Hannibal	Philadelphia	Ap. Jan. 31.			

NAVAL TRAINING SHIPS.

Astoria	Boston	Indefinite.	Caesar	Norfolk	Indefinite.
Long Beach	do	Do.	Quincy	do	Mar. 15.
Kittery	New York	Mar. 10.	Saturn	Mare Island	Feb. 20.
Pyro	do	Indefinite.	Houston	Puget Sound	Jan. 22.
Ramapo	do	Jan. 27.	Neches	Canal Zone	Indefinite.
Gulfport	Norfolk	Feb. 25.			

EAGLE BOATS.

Eagle No. 26	Portsmouth	Comp.	Eagle No. 35	Mare Island	Indefinite.
Eagle No. 44	do	Do.	Eagle No. 47	do	Do.
Eagle No. 59	do	Feb. 12.	Eagle No. 12	do	Do.
Eagle No. 29	Boston	Indefinite.	Eagle No. 57	Puget Sound	Do.

UNITED STATES SHIPPING BOARD.

Otsego	Portsmouth	Indefinite.	Agamemnon	New York	Indefinite.
Mount Vernon	Boston	Mar. 15.	Castletown	Philadelphia	Feb. 1.
Shickshinny	do	Indefinite.	Niawa	do	Indefinite.

BRAZILIAN GOVERNMENT.

Minas Geraes	New York	June 15.			

Vessels out of commission, etc.

BATTLESHIPS OUT OF COMMISSION.

Louisiana [2]	Philadelphia.	Virginia [2]	Boston.
Alabama [2]	Do.	Rhode Island [2]	Mare Island.
Illinois [2]	Do.	Vermont [2]	Do.
Kearsarge [3]	Do.	Wisconsin [2]	Philadelphia.
Kentucky [2]	Do.	Nebraska [2]	Mare Island.
Maine [2]	Do.	Georgia [2]	Do.
Missouri [2]	Do.	Oregon [2]	Puget Sound.
New Jersey [2]	Boston.		

BATTLESHIPS UNDER REDUCED COMMISSION.

Connecticut [1]	Philadelphia.	South Carolina [1]	Philadelphia.
Michigan [1]	Do.		

[2] No work being done. [3] Conversion into crane ship. [1] To be placed in full commission.

Vessels out of commission, etc.—Continued.

CRUISERS, GUNBOATS, AND MISCELLANEOUS OUT OF COMMISSION.

Dubuque [5]	Portsmouth.	Nashville [2]	Charleston.
Huntington [2]	Do.	Raleigh [6]	Do.
Isabel	Philadelphia.	Topeka	Do.
Ozark [2]	Do.	Monadnock [6]	Olongapo.
Pueblo [2]	Do.	Bay Ocean [6]	Mare Island.
Tonopah [2]	Do.	Marblehead [6]	Do.
Yankton [6]	Do.	Supply [6]	Do.
Langley [7]	Norfolk.	Yorktown [6]	Do.
Standish [6]	Do.	Wasp [6]	Norfolk.
Winchester [6]	Do.		

TORPEDO BOATS OUT OF COMMISSION.

CTB No. 6 (Morris) [2]	Newport.		

EAGLE BOATS IN ORDINARY.

AT PORTSMOUTH.

Eagle No. 1.	Eagle No. 9.	Eagle No. 28.	Eagle No. 46.[8]	Eagle No. 52.
Eagle No. 2.	Eagle No. 18.	Eagle No. 37.[8]	Eagle No. 48.	Eagle No. 55.
Eagle No. 3.	Eagle No. 24.	Eagle No. 41.	Eagle No. 50.	Eagle No. 56.
Eagle No. 5.	Eagle No. 27.	Eagle No. 45.		

SUBMARINES OUT OF COMMISSION.

U–117 [9]	Philadelphia.	UC–97 [5]	Chicago.
U–140 [9]	Do.	UB–88 [11]	San Pedro.
UB–148 [9]	Do.	U–111 [9]	Portsmouth.
G–1 [10]	Do.		

SUBMARINES AND SUBMARINE TENDERS IN RESERVE.

D–1, 2, 3 [12]	New London.	E–1, 2 [14]	Hampton Roads.
Eagle No. 33	Do.		
Fulton	Do.	Eagle No. 17	Do.
G–3 [12]	Do.	L–1, 2, 3, 4, 9, 10, 11	Philadelphia.
N–1, 2, 3, 4, 5, 6, 7 [12]	Do.	M–1	Do.
K–1, 2, 3, 4, 5, 6, 7, 8 [13]	Philadelphia.	F–2, 3 [14]	San Pedro.

SUBMARINES IN ORDINARY.

A–3, 5 [2]	Cavite, P. I.	B–3 [2]	Cavite, P. I.

VESSELS TO BE PLACED OUT OF COMMISSION IN NEAR FUTURE.

Elcano [6]	Asiatic Station.	Samar [6]	Asiatic Station.
Pampanga [6]	Do.	Villalobos [6]	Do.
Quiros [6]	Do.		

[2] No work being done.
[5] General repairs
[6] Conversion into aeroplane carrier.
[7] To be sold.
[8] In full commission.
[9] Being dismantled. To be used for depth charge experiments.
[10] Target for depth charge experiments.
[11] Sunk by gun fire.
[12] Submarine school, experimental and development work.
[13] Under repairs.
[14] To be placed out of commission. Elemental submarine school work.

Vessels out of commission, etc.—Continued.

REDUCED COMMISSION OR ORDINARY.

Rappahannock [5]	Portsmouth.	Hannibal [5]	Philadelphia.
Chester [5]	Boston.	Comfort [5]	Mare Island.
Ceasar [5]	Norfolk.		

DESTROYERS OUT OF COMMISSION.

AT PHILADELPHIA.

Ammen.	Henley.	Mayrant.	Paulding.	Terry.
Beale.	Jarvis.	McCall.	Perkins.	Trippe.
Burrows.	Cushing.	Monaghan.	Roe.	Walke.
Drayton.	Jenkins.	Patterson.	Sterrett.	Warrington.
Fanning.	Jouett.			

[5] General repairs.

Summary by navy yards of ships under repair.

PORTSMOUTH, N. H.	
Taylor	Jan. 22.
Israel	Jan. 25.
Ringgold	Feb. 15.
McKee	Indefinite.
Robinson	Do.
Stevens	Do.
Colhoun	Do.
S-2	Apr. 16.
S-9	Mar. 1.
S-16	Indefinite.
Rappahannock	Do.
Auk	Do.
Cormorant	Feb. 1.
Woodcock	Do.
Curlew	Indefinite.
Flamingo	Do.
Osprey	Do.
Eagle No. 26	Completed.
Eagle No. 44	Do.
Eagle No. 59	Feb. 12.
Otsego	Indefinite.

BOSTON.	
Chester (Res.)	Indefinite.
Galveston	Do.
Kimberly	Apr. 15.
Luce	Apr. 30.
Conyngham	Indefinite.
Meredith	Do.
Savannah	Apr. 1.
Patuxent	Indefinite.
Astoria	Do.
Long Beach	Do.
Eagle No. 29	Do.
Mount Vernon	Mar. 15.
Shickshinny	Indefinite.

NEW YORK.	
Tennessee	Appr. Mar. 15.
Childs	Feb. 1.
O'Brien	Feb. 12.
Maddox	Feb. 16.
Abbott	Indefinite.
Sampson	Do.
Robin	Feb. 7.
Culgoa	Feb. 12.
Aramis	Indefinite.
Ramapo	Jan. 27.
Kittery	Mar. 10.
Pyro	Indefinite.
Agamemnon	Do.
Minas Geraes (Br. Gvt.)	June 15.

PHILADELPHIA.	
Connecticut	Indefinite.
Michigan	Ready.
South Carolina	Do.
Craven	Jan. 29.
Winslow	Do.
Dixie (tender)	Apr. 1.
Ford (fit. out)	Ready.
Pillsbury (fit. out)	Do.
Cummings	Indefinite.
Ericsson	Do.
Goff (fit. out)	Do.
Sigourney	Do.
Wainwright	Do.
K-1, 2, 3, 4, 5, 6	Jan. 29.
N-4, 5, 6	Mar. 12.
Fulton	Indefinite.
Relief	Jan. 29.
Hannibal	Jan. 31.
Castletown	Feb. 1.
Niawa	Indefinite

NORFOLK.	
Clemson	Jan. 22.
Branch (fit. out)	Jan. 25.
A. P. Upshur (fit. out)	Do.
Benham	Indefinite
Downes	Do.
Duncan	Do.
Parker	Do.
W. C. Wood (fit. out)	Do.
T-3	Feb. 15.
Camden	Apr. 1.
R-1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Do.
Bushnell	Mar. 1.
T-1	Indefinite
Lebanon	Feb. 12.
Langley	Indefinite
Gulfport	Feb. 25.
Quincy	Mar. 15.
Caesar	Indefinite

CHARLESTON.	
Sacramento	Feb. 15.
Rodgers	Ready.
Belknap	Do.
Breckinridge	Indefinite.
Flusser	Do.
Maumee	Do.
Teal	Do.
Widgeon	Do.
Water Barge No. 31	Feb. 10.

Summary by navy yards of ships under repair—Continued.

NEW ORLEANS.	
Potomac	Indefinite.
MARE ISLAND.	
Champlin	Jan. 31.
Crane	Do.
Greene	Do.
Palmer	Do.
Schley	Do.
Shubrick	Do.
Williams	Do.
Buffalo	Feb. 28.
Babbitt	Indefinite.
Badger	Do.
Bailey	Do.
Chauncey	Do.
De Long	Do.
Jacob Jones	Do.
Ludlow	Do.
McLeish	Do.
Sloat	Do.
Swasey	Do.
Twiggs	Do.
Ward	Do.
Yarborough	Do.
Alert	Do.
F-2, 3	Do.
H-2, 5	Do.
Comfort (Ord.)	Do.
Oriole	Do.
MARE ISLAND—continued.	
Pigeon	Indefinite.
Saturn	Feb. 20.
Eagle No. 12, 35, 47	Indefinite.
PUGET SOUND.	
Missoula	Indefinite.
Charlotte	Do.
Seattle	Do.
Edwards	Jan. 22.
Rathburne	Ready.
Roper	Do.
Aulick	Indefinite.
Delphy	Do.
Gillis	Do.
Hogan	Do.
Howard	Do.
MacKenzie	Do.
McDermut	Do.
O'Bannon	Do.
Renshaw	Do.
Stansbury	Do.
Turner	Do.
Welles	Do.
Swallow	Jan. 31.
Houston	Jan. 22.
Eagle No. 57	Indefinite.
CANAL ZONE.	
Neches	Indefinite.

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Officer.	Initials.	Date received.	Date forwarded.
Captain			
Executive Officer			
First Lieutenant			
Navigating Officer			
Gunnery Officer			
Communication Officer			
Engineer Officer			
Medical Officer			
Supply Officer			
First Division Officer			
Second Division Officer			
Third Division Officer			
Fourth Division Officer			
Fifth Division Officer			
Marine Officer			

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MISCELLANEOUS.

THE NAVAL WAR 1914–1918, NORTH SEA. (FROM THE GERMAN NAVAL STAFF HISTORY.)

(Continued.)

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(A free translation.)

CHAPTER III.

Close or Distant Blockade?

The necessary supposition for the equalization of forces required by the operation order was a more or less close patrol or blockade of the German Bight. Only if the actual conduct of the War by England met these expectations were there prospects of corresponding success. Concerning the English plans of operations practically nothing was known. The only data of value as to how England would conduct the War rested on incomplete information that the Admiralty had received concerning the British Fleet maneuvers of recent years. The information derived from this source is given in a report entitled "Data on the English Navy in May, 1914," about as follows:

"Concerning the probable deployment the maneuvers of recent years as well as the known maneuvers of the British Admiralty during the period of 'strained relations' of the year 1911 give only hints.

"According to these the heavy units of the First Fleet have their deployment on the east coast of Scotland (Firth of Forth and Moray Firth). These bases have the advantage of midway position in relation to the German Bight and the Skagerrak, are protected, and efficient, and afford room for a large number of battleships and vessels of all kinds.

"Whether the battleship squadron of the Second Fleet, which is also of importance in the offensive conduct of the War, is likewise to deploy on the east coast of Scotland or farther south (Thames) is uncertain. For the choice of the Thames, the flanking position, the avoidance of crowding the Scottish bases, and the prevention of public unrest by completely emptying the Thames of heavy fighting forces are to be considered advantages.

"The battleship squadron of the Third Fleet will be assembled in the eastern Channel ports (Dover, Portsmouth), perhaps also in the Thames.

"Of the cruiser squadrons of the Second and Third Fleets those intended for war in the North Sea (Fifth to Eighth) will deploy according to the problems assigned them. As deployment harbors Scapa Flow (blockade of the Straits of Shetland-Norway), Firth of Forth (patrol of the Skagerrak, Humber, and Thames, operations in the southern North Sea) are to be considered.

"The patrol flotillas intended primarily for defensive operations (Sixth to Ninth Destroyer Flotillas and Third to Seventh U-Boat Flotillas) will be distributed along the east coast from Dover to Scapa Flow.

"To judge by maneuvers and other reports the distribution will be such that a destroyer flotilla will be assigned to Scapa Flow as a deployment harbor (blockade of the Straits of Shetlands—Orkneys—northern coast of Scotland), one flotilla each to Moray Firth and Firth of Forth (coast defense), one flotilla to the Humber (coast defense), and one to Dover (blockade of Dover Straits and coast defense).

"The five U-boat flotillas were as a rule distributed with Dover, the Thames, Harwich, the Humber, and Dundee as main bases among the most important harbors of the east coast (Dover to Moray Firth)."

A certain criterion as to how England will conduct the War is lacking. A series of maneuvers of earlier years represented the close blockade of our waters. The maneuvers of recent years and a series of weighty reasons speak for the fact that the distant blockade will be chosen as the basis of the conduct of the War by the English.

"Both kinds of blockades, which, furthermore, have much in common in the rapid shifting of the situation, frequently vary or are interchanged. The assumption that in the first days of the war, in which attacks on our part must be expected, our waters will be closely blockaded, is very probable. This also will happen if the English Grand Fleet is compelled to seek out our bases, hence an increased protection against U-boat, mine, and torpedo boat undertakings is necessary, and especially so if the transportation of the English Expeditionary Force to the Continent is intended. On the other hand, it is not improbable that the English, in the event of an energetic blockade defense on our part, will be compelled to change to a distant blockade of the North Sea. Against the employment of the close blockade of the German Bight, even though it was the object of English maneuvers, there are the following disadvantages: The position of the blockader is more unfavorable than that of the blockaded. His blockade forces, distributed over an extensive line, are exposed to attacks from compact and superior forces. They therefore need support from powerful vessels (armored cruisers), which are seriously menaced by torpedo boats, U-boats, and the

mines of the blockaded. In addition, these vessels require the support of their own main fleet, for any attack made by the blockaded will considerably weaken the blockade. For this reason the English Grand Fleet would take station within the radius of action of our torpedo boats and U-boats, a danger which would be enhanced by effective air scouting by the blockaded. The blockading forces are also considerably more exposed to weather conditions than those of the blockaded, whose bases are close at hand. They must at any time expect attacks of the blockaded, and are therefore forced to a large expenditure of material and fatigue to the personnel that necessitates frequent relief. On the whole, it appears therefore that the carrying out of a close blockade of the German Bight is difficult and productive of losses which militate against this form of blockade."

Concerning the probable form of a close blockade there was learned from the English maneuvers:

The inner blockade positions extended from Amerum to Spiekeroog; the Ems and Lister Tief were patrolled by special forces.

By day small cruisers and U-boats were to occupy these positions. Groups of destroyers were at predetermined rendezvous near the inner blockade line for the support of the cruisers. At night the lines were patrolled by destroyers, in the vicinity of which were the flotilla leaders with supporting groups of destroyers.

The outer blockade positions were occupied by armored cruisers that formed the outpost patrol. The bases of primary importance were the Thames and the Humber (near position to blockade zone). The outpost patrol consisted of several groups (squadrons) distant by day about 50 nautical miles from Helgoland, by night 70 nautical miles. On their stations these groups patrolled so closely that if necessary they could support each other.

To further strengthen the blockading forces in these blockade maneuvers detachments from the Grand Fleet were advanced as the main blockading fleet (detached battle squadrons) toward the blockade zone. They were stationed about 120 to 160 nautical miles distant from the outermost enemy base (Helgoland) and were so placed that they had a base available in the vicinity. As such the Firth of Forth is of prime importance. Whether, however, such a wide distribution of forces as described here is really to be seriously expected is doubtful. In general the English plan of war is to adhere to the principle of keeping the forces together.

Actually the Grand Fleet was in these maneuvers, as a rule stationed some distance away from our bases that it might be a far as possible from the attacks of light enemy forces. By this it is not meant that the Grand Fleet could not be advanced far enough to maintain an effective blockade.

It is clear that in such a conception of the blockade possibilities there would be offered to the High Seas Fleet opportunities of damaging the enemy by sudden thrusts, and thus through attrition bringing about the desired equalization of forces. The problem becomes much more difficult, however, if at the beginning the enemy, and for a considerable period of time thereafter, adopts the distant blockade. From the imperfect information obtained of the last English maneuvers the distant blockade would require that— [1]

"1. Our waters will be patrolled by outpost forces. By an extensive use of U-boats and mines as well as torpedo boats it will be attempted, as in the close blockade, to damage our forces.

"2. The North Sea outlets and the Skagerrak will be patrolled in order to cripple our commerce.

"3. It will be attempted to induce our main fleet to make long sorties that it may be cut off and forced to give battle far from its base."

In what form and with what forces the patrolling of our waters would be carried out is unknown and can not be prophesied. The status of the war, weather, and special circumstances will subject it to great variations.

The air-scouting force forms an important auxiliary, the employment of which in launching hydroplanes from vessels and rapidly progressing development of this means of scouting demands serious consideration.

The task of injuring us by U-boats and mines has been considerably lessened as we are confined to the Helgoland Bay as a deployment position and as a base. The local circumstances here also enhance the value of the U-boats and mines. Even without the protection present in the close blockade, where large cruisers which by their support increase the effectiveness of U-boats and mine layers by enabling them to approach closer, the English could expect the mine layers as well as the U-boats to considerably limit the mobility of our fleet and subject it to heavy losses.

For employment in our waters we are therefore chiefly concerned with light forces, the light cruiser squadrons, the offensive U-boats of the Eighth Flotilla, destroyers, mine layers, and aircraft. To be sure, large cruisers are also required as it is necessary to keep touch with stronger units of our fleet that they may be informed where to break through and for support in opposing corresponding English forces. They will not be stationed, however, on actual patrol, but simply keep touch and act as a supporting force. Therefore, although the composition of the patrol forces will remain approximately the same with the distant blockade, there will be more mobility and a less likelihood of losses.

---

[1] According to the above-mentioned report of the Admiralty staff.

"The uncertainty brought about by the latter method of patrol as to whether the sortie of our forces would be noticed and reported at the right time to the English Grand Fleet would increase their apprehension and that of the English coast through the danger of a surprise attack.

"Their coast is, however, as a result of a well-organized coast-defense service, in general regarded as well protected.

"The Grand Fleet in the case of a distant blockade would presumedly be at a greater distance from our base than with a close one. Its main rendezvous would probably be in the northern part of the North Sea outside the radius of action of our torpedo boats. From this position, on the report of an advance of our main fleet, it would endeavor to cut off its retreat and force it to give battle."

Even in this form of blockade it was not the intention of the Admiralty staff to dispense with fired patrol lines but simply to establish them as far as possible outside the radius of action of our light forces.

"In the maneuvers which had the distant blockade of the North Sea as an object (1912 and 1913) the blockade line ran from the center of the English coast (Flamborough Head) to the southern Norwegian (Skudesnes) or to the Danish coast (Hanstholm). The choice of blockade lines would probably be farther to the north as the advantage of shorter length and, therefore, greater stability would be gained. There are two to be considered: A line approximately from Battray Head to Oberstad (Norway), about 240 nautical miles in length, or a line approximately from Out Skerries (Shetlands) to Helliso, about 165 nautical miles long. The latter line would, however, necessitate the blockade of the Shetlands–Fair Island–Orkneys and of Pentland Firth, in all about 50 nautical miles, thus making the length of this latter line about 215 nautical miles.

The more northern line, including Shetland–Fair Island–Orkneys and Pentland Firth has the greater probability as this line has the greater stability (shortness), and part of it is suitable for the destroyer patrol as the latter would have near at hand bases situated at Scapa Flow and Lerwick. Cruisers would therefore be necessary only for the line between Shetlands-Norway.

A watch on the Skagerrak is to be expected even in the case of a distant blockade of the North Sea, for otherwise the patrolling forces stationed on that end of the line would be exposed to surprise attacks.

It is interesting to recall the fact that the last war game played by the Admiralty staff in the winter of 1913 to 1914 first commenced with a German offensive to the English coast and that on the return a battle was fought at one-third the length of the course toward the English side of the North Sea at a distance of 200 nautical miles from the home port. The English leader at that time pointed out

in his report that the English Grand Fleet must find a position in Scapa Flow as a base of the main blockade.[2]

So much for the deductions and deliberations of the Admiralty staff. It was necessary that those deliberations be thoroughly examined, that an insight might be gained as to the strategy to be used by the Admiralty staff in the event of a close or distant blockade. The deductions made show that the advantages of the distant blockade for the opponent were clearly recognized, but final conclusions were not made. If it was admitted that the situation of the blockader was more unfavorable than that of the blockaded, then it was to be concluded that the opponent would not bring himself into this unfavorable position so long as there existed other possibilities for the obtaining of his ends. The essence of the close blockade is the strategic offensive, that of the distant blockade the strategic defensive. Accordingly, the choice of blockade was dependent on the decision for the one or the other manner of conducting the war. This report discussed a great many theoretical details, but did not answer this fundamental question as to the probable behavior of the opponent, which later proved to be so deceptive. The opponent tenaciously adhered to the form of blockade which called for a strategic defensive. A nearer approach to the actual behavior of the opponent would have been gained if from these considerations a conjectural English operation order had been drawn up from an English standpoint along these lines:

1. The opponent is economically to be harmed by all means. His imports and exports over the sea, as well as his sea connections with neutrals, are to be throttled.

2. The military shipments to all sectors are under all circumstances to be safeguarded from enemy attacks.

3. The enemy fleet is only to be engaged under favorable conditions. A battle on the high seas with superior force and far from the German coast is the end in view. The enemy fleet is to be cut off if possible and its lines of retreat are to be obstructed with mines. Victory must in no case be purchased through the loss of essential units of our fleet.

As already stated, such a defensive attitude on the part of the English Fleet was not really considered on the German side, in spite of all reasons advanced in its favor. With us as well as with the opponent in all maneuvers and work of preparation for the War tactical dispositions rather than strategical were considered. In

[2] Compare the statement of the then commander of the Second British Battle Squadron, Vice Admiral Sir George Warrender in Kiel, that in England attention was first called by several articles of German naval officers to the importance of Scapa Flow Bay, and that thereupon the matter was considered of making Scapa Flow a base for the so-called distant blockade of the German Bight. He said verbatim: "Scapa Flow is a German discovery." (Taken from the book "The Two White Nations," published by K. F. Koehler, Leipzig; by Lieut. Commander Georg von Hase, p. 31.)

England the thought of an invasion, in Germany the thought of an advance of the English Fleet against the German Bight, were the principal considerations, and these opinions were too deep-rooted to allow any other line of reasoning. Therefore on our side at the outbreak of the War the Admiralty staff and High Seas Fleet still counted on a strategic offensive, even on a strong offensive blow on the part of the English Fleet. This view was further strengthened by the fact that even in English professional literature a similar view was often advanced. In a war of short duration, which might have been expected after a German victory on the Marne, a defensive attitude on the part of the English Fleet would have been an error. Besides it made possible a severe economic injury to England by the U-boat war on commerce. Such a far-going English defensive doubtless did not correspond in the least with the spirit of the British Fleet at the beginning of the War, which up to then had moved in the traditions of Nelson's conduct of war. Moreover, on the English side the political restrictions were responsible for this type of naval warfare.

Against an offensive on the part of the British Fleet was the circumstance that in the last years just previous to the war the ratio of strength had changed considerably in favor of Germany. The fleet policy of Grand Admiral von Tirpitz opposed a great obstacle to the offensive of the English Fleet against the German coast even though it did not prevent the outbreak of war. This reversal of circumstances, due to the unprecedented rapidity of technical development and also the torpedo and mine which were developed at such an undreamed of rate, during this period of transition were not in themselves sufficient to establish the fact that the distant blockade would be the plan of the opponent. The effect was reciprocal. The insufficient radius of action of the small cruisers and torpedo boats in case of a distant blockade was not sufficient to cause the German naval staff to change their construction program in order to meet the requirements of a distant blockade. In this connection it must also be considered that in the case of such a readjustment the large sums immediately necessary for further equipment would be regarded in distant circles of the German nation and also abroad not as a means of avoiding war but provoking it. Admiral von Ingenohl, the German fleet commander in the first period of the war, writes in a report completed in 1918 concerning the then conception of the probable form of the naval war as follows:

"The entire previous development of the fleet before the War, our tactics, our maneuvers, in part our ship construction (for example, the small steaming radius of a great number of our torpedo boats), rested on the prospect of the decisive battle being fought within or in the immediate vicinity of the German Bight under the supposition

that the English Fleet, in view of their superiority, would form a close blockade of the German Bight from the North Sea in order to cut off our imports by water and thereby force our fleet to the strictest kind of a defensive and force it to give battle.

"In the last years before the War, as a result of the impressions gained from various utterances here and there appearing in English professional literature, there disappeared hestitations and doubts as to whether the opponent would act according to plan and be content perhaps with blockading the Channel and the line Scotland–Norway. *These hesitations were also but slightly considered by the thought that such a blockade would never be recognized by the neutral States, especially by the United States,* and that the English, if at first they tried to get along without the blockade, must see in time that without a close blockade of our North Sea coast neither the activity of our fleet nor that of the mine layers would be crippled nor would its mission, the cutting off our sea imports, be obtained. As late as the last maneuver of the May trip, 1914, just before the outbreak of War, the leader of the opposition party, Vice Admiral Scheer, in his maneuver report, stated that in his opinion English prestige would not admit the giving up of a blockade or strict patrol of the German Bight."

Only thus can the operation order published at the beginning of the War and which took as a basis for the conduct of the High Seas Fleet, in contrast to our representations above set forth, an offensive activity of the enemy and a more or less close blockade of the German Bight be explained.

The operations of the next period should therefore demonstrate whether the principles as set forth in the operation order were actually present and further whether the behavior of these objects of attack and of the enemy Grand Fleet made actually seem possible the preparation for an equalization of forces.

CHAPTER IV.

German U-Boat, Mine, and Cruiser Offensives.

The standard for the employment of forces on the opening of hostilities was furnished by the operation order of His Majesty the Kaiser. In this order it was expressly emphasized that the employment of the fleet was to be considered only after an equalization of forces had been attained. A sudden advance of forces on a grand scale somewhat in the manner of simultaneous attacks of all torpedo-boat flotillas or the employment of a large number of small cruisers in mine undertakings against the English coast or finally an attack of the entire fleet on the Hoofden for the harassing and destruction of English troop shipments to the mainland, or against the Scottish ports, was first to be attempted. On account of the observation of

the German Bight instituted by the enemy immediately after the outbreak of war through U-boats and fishing steamers, the prospects of a surprise attack by superior forces were regarded as slight. To support them a moving forward of the entire High Seas Fleet into a covering position would have been necessary. However, in so doing a premature and not desired decisive battle would perhaps have been unavoidable. On the contrary, for the introduction of hostilities it was necessary to be satisfied with undertakings of petty warfare. The assumption of the blockade on the part of the English demanded, however, for this purpose other means than torpedo boats the number and size of which were designed for the close blockade. Even for unrestricted mining expeditions against the British coast, which the operation order represented as one of the first and most important tasks, the material was found to be very insufficient unless it was intended to use the small cruisers and torpedo boats equipped as mine layers which, because of their usefulness for battle and scout work, it was not desirable to employ for this purpose. The fleet commander expressed himself as follows in the war diary:

"Outside of the two mine vessels *Albatross* and *Nautilus*, the speed of which would be comparatively sufficient for a mine undertaking to the enemy coast, I have available only auxiliary mine-laying steamers of 14 knots or considerably less speed." By way of auxiliary mine-laying steamers, however, in accordance with the mobilization only three were provided for the Baltic and North Seas, respectively, three more being added at the beginning of the first year of the war. Their speed was on the average 13 to 14 knots and their mine-carrying capacity 150 to 200 mines. The *Deutschland* and *Preussen*, vessels of the Sassnitz-Trelleborg Line, each having space for 400 mines, had a greater carrying capacity and higher speed. They were, however, because of their unseaworthiness, not suitable for the North Sea sector. The only modern mine layers of the fleet were the *Nautilus* and *Albatross* with a speed of 20 knots and a total carrying capacity of 400 mines, of which only 200 could be kept ready for one operation. The use of these two vessels was, however, not intended until the nights became longer and the manner of the English observations system of the German Bay had been established by scouting.

There was available for a surprise attack on the Thames only the auxiliary mine-laying steamer *Königin Luise*, of the Hamburg-American Line, and to her accordingly was assigned the honorable task of opening hostilities against England. The equipping of the *Königin Luise* was begun on the afternoon of 1 August at Luschaven, and in about 12 hours was completed; on 3 August the ship anchored in Wilhelmshaven Roadstead; on 4 August it went to the Ems. In view of the uncertainty of the situation, which at any moment might become a state of war, and the immediate necessity for mine

vessels, that part of the equipment calling for two 8.8-cm. guns, and for which the ammunition was then on board, could not unfortunately be installed, so that the entire armament of the vessel consisted of but two 3.7-cm. guns besides the small-arm equipment for the crew.

Immediately after the announcement of a state of war with England the fleet commander on 4 August, at 1.30 p. m., gave instructions by radio: "Auxiliary cruiser *D*[1] put out at once.[2]" Immediately afterwards there followed by radio the following operation order for auxiliary mine-laying steamer *B* (*Königin Luise*):

"Sail immediately at maximum speed in the direction of the Thames. Lay mines as close as possible to the English coast. Do not lay mines in the vicinity of neutral coasts or farther north than 53° north latitude."

It was later decided that such undertakings should be authorized only by key words in wireless, as the picking up and deciphering of detailed radio messages by the opponent endangered at the outset the secrecy of the undertaking. This possibility was, however, first recognized by both sides after longer experience and utilized to an increasingly greater extent. It is not to be assumed that not taking this precaution could have been important at that period.

When the sailing of the ships was ordered, the situation in the North Sea was judged as follows by the commander in chief of the High Seas Forces:

"The reports which so far have been made concerning the supposed deployment and location of the English Grand Fleet make it appear probable that the Grand Fleet is west of longitude 4° east (that is, west of the longitude of Hock van Holland) at a safe distance from German torpedo boat bases. In the period of strained relations numerous heavy forces are said to have been sighted at a middle position in the German Bight northwest of the island of Helgoland."

At the time the idea of a closer English blockade line had not been considered. It is all the more remarkable that both vessels were not accompanied by High Seas Forces. An example of such a convoy would have been the accompanying of the auxiliary vessels to the supposed blockade line and then to take up a covering position for the next morning in the event of the auxiliary cruisers being driven back by enemy forces or their retreating in a damaged condition the result of an engagement even though their missions had been accomplished. With such a convoy the possibility for strategic scouting and, on meeting the opponent, perhaps the opportunity for winning a "partial success" would be afforded. If it was not desired to expose the auxiliary cruisers, however, by the simultaneous appearance of

[1] Auxiliary cruiser, *A*, *Victoria Louise*; *C*, *Berlin*; *D*, the North German Lloyd steamer, *Kaiser Wilhelm der Grosse*.

[2] The activity of this vessel, which was intended for cruiser warfare in the Atlantic Ocean, will be discussed in detail later.

our own warships the same purpose could be attained by the convoy forces advancing in extremely open formation with the auxiliary cruisers in advance of them. Obviously, for this purpose the entire fleet must put to sea as a reserve, a contrast to the confining dispositions of the operation order. This was abandoned at the start, however, because of the U-boat peril. As actually no English blockade forces appeared, the success justified this omission to a certain extent.[3]

An order of the commander of the Third Squadron to get up steam when auxiliary cruiser *D* was ordered to go out permits the conclusion that in this division of the fleet there was a high degree of preparedness. There was a slight support of the auxiliary cruiser in that an aeroplane explored as far as 85 nautical miles northwest of Helgoland and noticed nothing suspicious.

Doubtless the passive attitude of the High Seas Forces was strengthened by the fact that on the same afternoon an enemy U-boat was sighted off the north harbor of Helgoland, and consequently the appearance of other enemy U-boats in the German Bight was expected. At this time it was still believed that our own ships in the presence of enemy U-boats at sea would be exposed to an extremely great danger, an overestimation of the U-boat which will be referred to later. On 5 August, at dawn, even the small cruisers of the patrol line were withdrawn into the river mouths and left there for the day. In this way the possibility of a successful covering of the auxiliary cruisers about to return was still further limited.

The deed of the *Königin Luise* merits much space if only for the reason that it represents the first North Sea undertaking in the War which led to a conflict with the enemy.

This undertaking was the result of a conversation between her commander and the fleet commander, the result of which led to the employment of the ship on the English boat. A preliminary condition for its success was surprise, and even this essential was endangered by the assigning to her of a mooring in the Ems, for this permitted observation from the Dutch coast. Its anchorage there was considered necessary as it diminished the distance to the Thames. Furthermore, the vessel on a trip to Hamburg on 2 August had been sighted with its changed coat of paint by the enemy merchant vessels detained off Brokdorf. Those vessels must have found time after their liberation to report their observations. Again, it was unfortunate for this undertaking that for the night part of the journey there was a full moon and that it was necessary to enter the Thames during daylight. But it was thought that the delay which would result in waiting for nightfall would increase the danger of capture, especially as not only

[3] The auxiliary cruiser *Kaiser Wilhelm der Grosse* first found patrol lines on the Norwegian coast.

a patrol of the English coast was expected but also a reconnaissance on the part of the enemy in the direction of the German Bight. Meetings with merchant vessels were all the more to be avoided as the *Königin Luise* was a vessel well known in the North Sea and easily recognizable by its shape. Because of these considerations the commander decided if possible to avoid the usual routes, to run out close to the Dutch coast, then to cross the main channel for a short time, passing between the lightships *Outer Gabbard* and *Galloper*, at the same time remaining outside their visibility circles and into the King's Channel. The choice of the northern entrance seemed the safer, as there was more active shipping and a sharper lookout was maintained off the southern Thames.

At sea the ship was repainted so that the vessel resembled the English steamers flying between Harwich and Hoch van Holland, the route of these steamers being taken in approaching the Thames, a deception that during the first part of the journey met with success.

The mine arrangement was concealed from view. The 40 aftermost mines were intended as defensive mines to be used during the journey to the mine field. They were called time mines; that is, after the elapse of a certain period of time they automatically became inoperative. The course followed to the Thames will be seen from chart 8 and was 16 nautical miles in length. Off the Dutch coast Dutch warships with unscreened lights were passed without discovery. Not until entering the main channel outside the Thames was an English steamer sighted. The latter, to be sure, soon passed out of sight, but sent a radio message, which, in spite of immediate interference by the *Königin Luise*, probably reached its destination. To judge by appearances it was a weekly steamer plying between Hamburg and England, which must have recognized the vessel. Everything was entirely ready for battle. The ship was hidden by a rain squall and proceeded at full speed for the Thames. When the rain let up at about 11.40 a. m., an enemy destroyer flotilla was sighted, the *Amphion*, with 16 boats of the L class [4] on a southern course 4 to 5 points to starboard. Concerning further events, the commander of the vessel, Lieut. Commander Biermann, reported as follows:

"I immediately gave the order to drop the mines on a southern course at maximum speed. The boats at high speed headed for the *Königin Luise;* two of them—*Lance* and *Landrail*—chased us, the others surrounded us on the east and west.

"The mine-dropping continued without interruption. All officers and men available assisted. 'Floaters' [5] were not observed. The mine laying remained concealed from the enemy.

[4] The L class is composed of 20 torpedo-boat destroyers, which begin with the letter L (*Landrail, Lance, Lookout, etc.*) and which were launched in the years 1913 to 1914; tonnage, 980.

[5] faulty working of the depth mechanism the mine floats on the surf are and is thereby betrayed. Such mines are called "floaters."

"At first, being unable to make out the nature and speed of the boats, I hoped to be able to reach neutral territory. Toward the end of the mine barrage I therefore turned gradually to a southeastern course. This course offered at the same time the prospect of drawing the pursuing boats on to the barrage, which lay especially unfavorably with reference to their course at that time. According to my estimation, the pursuing destroyers must have passed close to the obstruction but did not pass over it. In spite of the high speed of the *Königin Luise*, running at the rate of 21 knots, the distance rapidly decreased. In view of the high excess in speed and the great superiority of the opponent in fighting power an escape was no longer to be considered. It was only a question of insuring to the *Königin Luise* an honorable defeat and at the same time of keeping the barrage secret from the enemy.

"Toward 12.15 p. m. the distance was only about 4,000 meters. The torpedo boats fired a blank shot, the battle flag was hoisted on the *Königin Luise*, the fight was on. Immediately thereafter I had the following report repeated several times to the High Sea Fleet: 'Task performed, 125–a,[6] am engaged.'

"After about eight shots the enemy obtained the range, the *Lance* and *Landrail* kept off the starboard quarter in echelon formation so that six of their 10.2-cm. guns came into play. To this the *Königin Luise* could only reply with her two 3.7-cm. guns and small arms.

"The first officer, Lieut. Gadon, directed the firing. As the boats did not approach closer than 3,000 meters, I gave permission to open fire at this distance, although the range of the 3.7-cm. guns was only 2,400 meters. The point of fall could not be distinguished because of the rough sea. The gun shields we placed close to the stern on the steering house and on the after promenade deck. The guns were aimed at the upper corner of the funnel with the sight set for 2,000 meters. Small arms were used to keep the crew occupied.

"The first hits scored by the enemy were in the stern and placed the second-class saloon, equipped as a hospital, out of commission. During the transmission of the report to the fleet the wireless mast was shot away and with it went the battle flag. After several severe hits I gave orders to sink the ship in order to avoid unnecessary losses and to prevent in any case the ship falling into the hands of the enemy.

"The men manning the guns and the gun shelters behaved excellently. The losses among this personnel were, compared to the bridge personnel, extraordinarily high; none escaped with their lives, as I heard, from the gun shelters in the stern. Substitutes were, however, constantly on the spot and came uncalled to the guns and to the abandoned small arms.

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[6] 125–a means location of enemy on square chart.

"After a fight lasting more than an hour the ship was out of action. The helm could no longer be moved, the ammunition had all been expended, engine and boilers remained uninjured until there was a break in the pipes of the steam whistle, the ship was burning in several places and lay to ready to capsize to port. The pursuing vessels *Lance* and *Landrail* soon ceased firing.

"At this time the destroyers that had surrounded us came up with the *Amphion*. Although the *Königin Luise* lay there defenseless they still fired some shells, thus causing unnecessary losses. After they had stopped firing I gave permission to abandon the vessel.

"To call the crew to quarters was no longer possible because of the imminent danger of capsizing the burning vessel and again because of the broken communication service. When, however, at about 1.20 p. m., I with the rest of the crew had abandoned the ship, the *Königin Luise* with flag flying from her foremast sunk whilst the swimming groups burst into cheers.

"The survivors of the crew were picked up by the destroyers and chivalrously treated. The enemy, too, had suffered some losses by gunfire and of course slight damages. The commander of the ship on which our commanding officer went expressed to him his feeling that they had fired too long at the *Königin Luise* and asked why the flag had not been lowered. When Lieut. Commander Biermann replied to him that this could not be expected of a German commander he uttered words of admiration for His Majesty the Kaiser and the spirit of his navy.

"After the fight the flotilla, with the prisoners on board, made an advance in the direction of the German Bight. When the flotilla, early on 6 August, was returning to Harwich the commander of the *Königin Luise* witnessed the leading cruiser *Amphion* run on the barrage and after a few seconds sink with the loss of about 150 men, among these, unfortunately, 18 of those rescued from the *Königin Luise*. Not one of the brave German men had said anything to the enemy about the mine barrage. Later the English endeavored by threats to obtain statements concerning the vessel and the mine barrage from, among others, the first officer of the Hamburg America Line, Bothmann, who, as well as other officers of the line belonging to the ship, had voluntarily remained on board. When he offered to look for the mines on a destroyer, his intention to allow the vessel to run on the barrage was discovered, the discussion was broken off, and he was placed under arrest.

"The exact location of the barrage remained unknown to the English; as the mines were laid it occupied the following squares: 130, 128, 127, 126, 125, additional number 6.

"This and the following German mining operations later gave the British Government, as has already been pointed out, the welcome occasion for a note to the neutral powers in which it entered a protest against the laying of German mines. In the protest it was asserted that the mines had been laid in a manner contrary to international law and at inadmissible places; that they were not securely anchored and superintended, and were not announced to neutrals according to regulations. Reference will be made again later to the detailed refutation of these statements as contained in the reply of the German Government of 7 November, 1914. Here it will only be emphasized that the latter assertion throughout contradicted the facts. Already on 7 August, 1914, the German Government had sent the information to all neutral powers that the approaches to all English ports would be obstructed by mines on the part of the Germans. Neutral shipping was therefore informed concerning the fact of mine laying and the places where German mines were to be expected. The English protest also had only the purpose of concealing the English serious violations of the rules of international law laid down in the London Declaration and to prepare public opinion for the later, and contrary to international, law closing of the North Sea, which in its economic significance was equivalent to the blockade of neutral coasts.

"The mines of the *Königin Luise* caused the loss of the first English warship in this war, though under the pressure of superior enemy forces they could not be planted close to the enemy coast, but had to be planted prematurely. The crew with the extremely meager means at their disposal fought to the end, and thereby showed heroic courage which compelled respect from the opponent on the occasion of his first engagement with a German warship. The commander was able to perform his extremely difficult task under obviously unfavorable circumstances, so that the venture met with success. This is all the more remarkable since, according to statements of the English officers made to those rescued, the ship was expected by the flotilla. It was known that the ship left the Ems with mines. Four officers and 73 men met a heroic death in this first loss of the German Navy in this war; 20 were wounded. It meant a special loss for the further conduct of the mine war that, with the capture of the commander and first officer of the *Königin Luise*, the further cooperation of two noted specialists in this field was lost.

"Meantime the fleet command supposed that there were heavy English forces in the middle of the German Bight, a position which for this purpose was well adapted strategically, although exact news of the enemy was not at hand. It was only known that the

First and Second Fleets shortly before the outbreak of War had returned to the Firth of Forth, but then had gone out again after taking on supplies. It was intended to make an attempt to detach part of this force and prepare the way for an equalization of forces for the final decisive battle. On account of the at that time still short and very bright moonlight nights and because of the considerable distances to be covered from the base the use of torpedo boats against this main fleet did not seem advisable. The presence of special enemy blockade and protective forces was also still counted on, which could hardly be passed unnoticed during the bright nights. Therefore, the commander in chief of the fleet decided, on the request of the senior U-flotilla commander, Lieut. Commander Hermann Bauer, all the more willingly for a U-boat undertaking of major scope, as it was not probable that the U-boats would find opportunity to attack heavy enemy forces within the patrol lines as laid down. Ten boats of the First U-Flotilla were to advance in a U-line from 60 to 70 nautical miles in a northwest direction from Helgoland and to attack the English Grand Fleet; duration of the undertaking about six days. An exploration by surface forces to establish the location of the enemy's main fleet did not precede because on account of the great distance and in view of the retention of the fleet as ordered it was hardly feasible. It was also unlikely that the fleet would not be warned of attack by occasional sighting of German surface craft.

"Although the boats of the Second U-Half Flotilla were newer,[7] yet the first was assigned this mission, as this undertaking was, primarily, dependent on the practical experience of the U-boat commanders. For the protection of the German Bight six U-boats were retained. The plan to let 10 U-boats [8] advance over the entire North Sea as far as the Orkney Islands on an expedition lasting six days, alone and without support of other forces and without previous experience and right at the beginning of the War, must be characterized as extraordinary. Even in peace time such performances as were now demanded had not been asked of the U-boats. The fleet commander followed in his order an appeal of the commander of the First U-Flotilla, who had expressed himself as follows:

"'The hitherto defensive employment of U-boats on a day patrol line which has the form of an arc about Helgoland has no value for the U-boat. There are but slight prospects that the opponent will come up to the line, and even then it is doubtful whether the boats will be successful. It may be added that in this kind of service the wear and tear on the material is very great. Only offensive U-boat action can bring about a change. The risk will be greater,

[7] Concerning the technical questions special treatment will be given.

[8] At the beginning the boats of the Second U-Half Flotilla were to participate in the undertaking.

but with it and, indeed, in greater measure, grow the prospects of success.'"

The object of the undertaking (cf. app. 2, Operation Order of the First U-Flotilla) was an attack on a supposed English main fleet in the North Sea, as well as on large cruisers, whereas light forces moving forward were only to be attacked if the opportunity for shooting was especially good. Only on the return trip must every opportunity for injuring the enemy be used. It was a question, then, of an offensive on a grand scale, in which light forces were not intended to play a part.

The advance and return (see chart 9) was to take place on lines of bearing on which the boats maintained a distance of 7 miles. From the first line there was a stretch of about 300 miles to the second to be covered, and then they were to go to a third. The latter was approximately the line connecting Scapa Flow, in the Orkney Islands, and Stananger. Here the U-boats were to meet about 72 hours after going out and remain on watch until the following day at 6 p. m—that is, about 40 hours—then the return to Helgoland was to commence.

The prospects of success were, in spite of the large area of the sea to be covered, not considered as unfavorable. There was a general inclination to give the preference to seeking for enemy forces on the high sea rather than on the enemy's coast. In this regard the commander of the First U-Flotilla writes:

"The offensive employment of U-boats on the enemy coast entails therein great difficulties because through patrol vessels, aviators, signal stations, and by vessels of commerce U-boats are very soon observed. If the surprise attack miscarries, then the enemy will withdraw from danger at the right time. In searching on the high seas the circumstances are quite different. Here the opponent lacks the auxiliary means of the coast. A chance discovery does not render success impossible, as the U-boat is not bound to one place, can move around, and the opponent does not know where it will turn up. The disadvantages of searching on the open sea consist in that with a limited number of U–boats nothing will be found if one is not sufficiently informed as to the purposes and location of the opponent. Even although an English patrol line across the North Sea must be counted on still the prospects for an advance to the north were not unfavorable."

At another place it says: "That the entire undertaking will be a blow from a clear sky is really only conceivable if the opponent has no patrol line laid out, thus abandoning any blockade of the North Sea."

The positive assumption of the constant maintenance of such a patrol line was, to be sure, the cause for the stationing of boats at

points where enemy forces went in and came out; that is, just outside the zone of coast defense, and which avoided all the previously mentioned disadvantages.

Although good and clear weather was of the greatest importance for the undertaking, in view of the duration and the distance to be covered, still undue consideration of the weather conditions could not be given, and accordingly on 6 August, at 4.30 p. m., in spite of unfavorable weather prospects, a start was made according to plan. There were the U-boats *U 5, 7, 8, 9, 13, 14, 15, 16, 17, 18,* commanded by Lieuts. Lemmer, König, Stoss, Otto Weddigen, Count Arthur von Schweinitz, Schwieger, Klaus Hansen, Lieut. (junior grade) Feldkirchner, and Lieut. von Hennig. The small cruisers *Hamburg* and *Stettin* took over the scouting about 10 miles on the flanks of the U-boat line. The leading vessels *S–99* and *D–5* followed behind the U-boat line as radio repeaters. Aircraft scouting as planned was given up because of the bad weather. In case of opposition the cruisers were not to press the enemy forces back, but endeavor to lead them toward Helgoland, so that the U-boats could pass the enemy line as quickly as possible, maybe submerged, and thus continue the advance. In the event of the superiority of the opponent the procedure to be followed is not given in the order. *Hamburg* and *Stettin* accompanied the U-boats to a point distant 100 miles from Helgoland (to O44B). The flotilla commander considered this necessary for the greater reason that perhaps later information from the enemy might make it advantageous to change the general course of the U-boat line by a radio signal. In so doing he accepted the chance that the two old slow cruisers might be destroyed far from their bases by superior forces. This danger was all the greater, as the fleet command had not provided for participation by any capable fighting craft.

During the westerly advance numerous fishing vessels, principally Norwegian, were passed. By an initial course to westward it was hoped to conceal the destination of the U-boats. In case the U-boats were later reported the assumption of the opponent would be that the undertaking was directed against the English coast and not against the Grand Fleet, supposed to be on the high seas.

German fishing steamers reported that at 56° and 57° north latitude they had seen nothing of the enemy, but, on the other hand, one fishing vessel in latitude 56° north, longitude 2° east, reported that it had been illuminated at night approximately in the supposed locality of the Grand Fleet by a torpedo boat. A Dutch steamer coming from Skagen reported that it had seen nothing of the enemy. About noon the *U–5* sighted an enemy U-boat in 85B, the conning tower of which quickly submerged and then disappeared. The hope of finding fewer fishing vessels on a more northern course because of

the increasing depth was justified. Because of trouble with the oil engines while on this course the western flank boat *U–5*, after covering a stretch of 225 miles, was compelled to turn back; the other boats, with the exception of two, carried out the task as planned and returned in good order by the afternoon of 11 August to Helgoland Harbor. It was even possible for one boat, the *U–18*, commanded by Lieut. von Hennig, to go beyond the scope of the undertaking, and on the order of half-flotilla commander, Lieut. Spindler, on the same vessel, to make an advance within the given time from base line V to the 60th degree of latitude. It was hoped that, as no enemy had been sighted, the patrol line of destroyers and light forces supposed to be at base line 3 would be found farther north, perhaps between the Shetland Islands and the Norwegian coast. Previous reports concerning early English maneuvers strengthened this supposition, but even there nothing of the enemy was seen. Not until the return was anything sighted. Then the *U–18*, on 9 August, at 5.45 a. m., when about 20 miles south of base line 3, during a passing rain squall, wind force 6, heavy sea, hazy weather, suddenly sighted a vessel with three or four funnels distant 1 mile, which by the helmsman was thought to be an English cruiser, although the commanding officer and half-flotilla commander considered that doubtful. After hasty diving nothing more was to be made out through the periscope.

One and one-half hours later the *U–18* sighted at 57° 45′ north and 3° 40 east an enemy destroyer, which to judge by its course might perhaps belong to a patrol line.

It is very probable that about this time, under similar unfavorable weather conditions, the *U–15*, commanded by Lieut. Richard Pohle, suddenly coming upon an English cruiser, and having no time to submerge, was destroyed. This assumption was strengthened by two English radio messages from Poldhu, the first of which reported to the British Admiralty that a cruiser squadron of the Grand Fleet on 9 August was attacked by a German U-boat and that it was destroyed without any losses on their part. In the second telegram, the First Lord of the Admiralty, Churchill, congratulated the mayor of Birmingham that a cruiser of the same name had destroyed a German U-boat. It was therefore safe to assume that the *U–15* had fallen a victim to this encounter, especially as the boat on 9 August at 2.27 a. m. was still in radio communication with the *U–18*.[9] Otherwise during the entire undertaking clear and favorable weather prevailed and nothing of the enemy was reported by the other U-boats.

On the other hand, the *U–13*, commanded by Lieut. Count Arthur von Schweinitz, was never heard of again after leaving Helgoland on

[9] As the English statements after the end of the war have shown, this assumption was correct.

6 August. There is no available evidence to establish just how the loss of this U-boat occurred.

The advance of the U-boats was ordered by the commander in chief of the fleet to prepare the way for an equalization in forces by an attack on the enemy's main fleet. Lieut. Commander Hermann Bauer had, of course, the idea of clearing the way with the weapon intrusted to him and then making a trial of strength on which a further offensive was to be based. Even if heavy English forces were not found in spite of the duration and extent of the undertaking, still the determining of this fact as well as all other observations were of considerable importance. Meanwhile valuable data concerning the location and conduct of the English forces would result unless such brief encounter with the enemy took place during a bad weather period of the undertaking. From the observations reported it was doubtful whether the forces sighted belonged to a regular patrol line and thus establishing that fact or whether it was not still further north in the latitude of the Shetland Islands. The location and conduct of the enemy's Grand Fleet were furthermore uncertain, though a sailing vessel, when questioned by the *U–18* concerning the enemy, stated that on 7 August it had sighted a squadron of eight vessels at 55° 20′ north and 0° 10′ east.

It was unfortunate that because of the hazy weather and heavy sea that English cruisers succeeded in discovering one or two of the U-boats proceeding at very great distances apart in the North Sea and in putting them out of action before the latter could attack.

In spite of the loss of these vessels and although the opponent was not damaged, the total gain of the undertaking was considerable. Officers and men of the U-boats saw themselves for the first time under war-time conditions confronted with a task which had never to the same extent been asked of them in peace-time drills. Without exception they conducted themselves well and the actual performances exceeded all expectations.

The confidence in the efficiency of the U-boat as a weapon was thereby firmly established. The fact that our boats were discovered by the opponent so far from their bases could not but fail to make its impression on the latter. Above all, the command, as a result of this experience, saw itself now in possession of a weapon which apart from injuring the opponent promised far-reaching and more dependable results than could be attained by the surface vessels of the fleet, a circumstance that must be highly appreciated in view of the small number of effective and powerful cruisers. It is all the more to be regretted that this attempt was not repeated along the same lines and with an even greater number of U-boats.

Any cruiser operation extending the same distance, aside from the question of strategic feasibility, would have required a thorough

protection of its line of retreat by the fleet and could not have been extended to such a distance and for so many days. The cruiser is in scout work much more exposed to destruction by superior forces of the enemy than the U-boat, which escapes by submerging. In other respects, however, scouting by U-boats can not be considered the equal of scouting by cruisers. Because of the small height of the eye the U-boat is to be compared to a short-sighted sentinel. Its circle of visibility is greatly limited. Further, on account of its slow speed, it is not able, like the cruiser, to maintain contact with the enemy for any length of time. Here it is hindered by the superior fighting power of the opponent, who as a rule compels it to immediately submerge upon sighting. Numerous pursuers will then lie in wait that the sending of a radio report on what has been sighted may be delayed as this can not be done until coming to the surface again and when the enemy is out of sight. Hence the exclusive employment of U-boats in long-distance scouting was significant as an emergency aid; scouting by surface forces accompanying it at every step and traversing the same distance was not possible.

While the undertaking begun on 6 August was still in progress and the fleet command as yet knew nothing of the result, a telegram arrived from the Kaiser during the forenoon of 8 August containing new instructions in regard to operations. The reports of the transportation of English troops to the mainland had been so substantiated by this time that it seemed necessary to take steps in that direction. For protecting the transports it was believed that for the time of their passage an especially strong patrol or blockade of the German Bight must be assumed. Under this hypothesis there was the following opinion as to the possibilities of disturbing or injuring the same held by the Admiralty staff shortly before the War began: "An effective means of threatening and thereby delaying English troop shipments is afforded by the blockade defense. The more often and energetically offensive thrusts against the English blockade are carried out the greater will be the insecurity felt by the opponent and the more difficult will it be for him to decide to allow the sailing of the transports. The situation calls for the direct damaging of the transport service, and if possible this task will have to be undertaken by U-boat expeditions and by strewing mines on the routes followed and at the entrances to ports of embarkation and disembarkation of the transportation service. On the other hand, the employment of our main fleet, even under the most favorable conditions, would insure only the success of a delay and not actual injury to the transportation. The advance would soon be reported to the opponent. The transport fleet could return in time to its own safe harbors, due to the period of time required for our main fleet to advance and the short route taken by the transports. Because of the slight prospect

of corresponding success, the employment of our main fleet was not considered worth while. Again it would in its advance be subjected to enemy torpedo boat and U-boat attacks and would be compelled to give battle near the enemy coast under perhaps unfavorable tactical conditions and against superior enemy forces. Whether in general and from what point of time undertakings against troop shipments should be carried out can only be decided by those directing the war on the basis of incoming reports and their knowledge of the situation as a whole. Whether the entrances to Dutch and Belgian ports should be obstructed by mines or not must depend on the general situation in Holland and Belgium at the beginning of the War and their attitude with reference to attempts of the enemy to land."

The time of the transportation of the expeditionary force was uncertain. According to the calculations of the marine transportation division of the Reichs-Marine Unit, the embarkation of the same could hardly begin before the 12th day of mobilization and the disembarkation at Belgian and French ports would not be completed before the 15th or 16th day of mobilization. As a matter of fact the reports on the English troop shipments were up to 7 August very indefinite and meager. By way of important information it had only been learned that on 29 July at Zeebrugge there had been 10,000 Belgian troops and an extraordinarily large number of railroad cars. A captain of an English steamer that plied once a week between Hull and Zeebrugge had said that on the next trip (the 31st) he was to bring troops but no passengers. However, on 7 August it was suddenly learned through informations from Holland that the shipment of divisions sent in advance would begin on that very day and that of the entire English Expeditionary Force would directly follow. On 8 August the definite news was received that the shipment of the English Expeditionary Force to Zeebrugge, Ostend, Dunkirk, and Calais was in full swing. Accordingly the preparations must have been begun a few days before the Declaration of War.

Only after the end of the War was it learned from "disclosures" of the then British Minister of War, Lord Haldane, on the occasion of a lecture before generals of the Expeditionary Force at Bedford College, published in Scotsman of 30 November, 1918, that the Expeditionary Force was transferred a few hours after the Declaration of War with the aid of the navy before anyone knew anything about it.[10]

The hypotheses for the previously arranged conduct toward English troop shipments had demonstrated that they were incorrect in

[10] He did not think people knew when we mobilized. He would tell them. We mobilized at 11 o'clock on Monday, 3 August, 33 hours before we declared War. Mobilization was not a Declaration of War, and they could mobilize in time of peace in order to be ready. Within a few hours of declaring War the Expeditionary Force, with the aid of the navy, was right across the Channel before anyone knew of it. This detachment reached the place of concentration within nine days.

more than one respect. A blockade or strict patrol of the German Bight had, contrary to expectation, neither been imposed at the beginning of the War nor begun with the shipment of troops; according to all appearances the British conduct of the War considered the protection of the transports as sufficient by the placing of stronger forces at the eastern end of the Channel. It was, therefore, a question, according to the opinion of the Admiralty staff, of making the offensive character of our conduct of the War felt by attacks on these covering forces through mine, torpedo, and U-boat undertakings and thereby securing at least an indirect effect on the shipment of the English Expeditionary Force. The telegram of the Kaiser contained the following directions for the commander in chief of the High Seas Units:

"Shipment of English Expeditionary Force in process probably to Zeebrugge, Ostend, Dunkirk, Calais. For its protection from the North Sea, forces have advanced between the Dutch, Belgian, and and English coasts. First Fleet in the North Sea, presumably ready to intervene. Covering forces offer good object for attack by light forces and mines. His Majesty intrusts the attack to torpedoes boats and mines, especially U-boats. To be carried out with due regard for the prospects of success according to weather and special circumstances. General lines of the operation order shall also apply to this undertaking.[11]"

Thus the employment of the fleet was expressly refused. Without the support of the fleet, however, it was hardly possible on the short

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[11] In this connection attention should be called to the following observations in the records of the then chief of the Admiralty staff, Admiral von Pohl, which especially show the constant restrictions placed on the conduct of the Naval War resulting from the peculiar view as regards England held by the Imperial Chancellor:

8 August, 1914, 8 a. m.—Fleet received report from me that the vessels of the Second and Third Fleets were protecting English transports on the north, a good target for light forces.

11 a. m.—Presented to His Majesty, who approved. His Majesty alludes especially to U-boats; fleet will be correspondingly informed.

12 o'clock.—Imperial Chancellor telephones that Lichnowsky was with him and had had still another conversation before he left England, the substance of which was that England wished to get out of the War with us as soon as possible. The chancellor asked why the escape of the *Goeben* from Messina was not to be attributed to a great hesitation on the part of the English, showing their intention of not striking any heavy blows. I said that this thought had occurred to me also, but in any event it was a gross error on the part of the English admiral, and should not effect the conduct of the War. His Majesty had certainly ordered the use of light forces. Lichnowsky had, in my opinion, viewed the entire situation, before and during the crisis through rosy spectacles, which view was still in vogue. I related this to Tirpitz and also the orders on the part of His Majesty. Tirpitz had no objection to the employment of U-boats and wished that the fleet would give battle. I brought up the possibility of doing something with U-boats.

6 p. m.—The chancellor telephones me: "My conscience gives me no rest. After mature consideration I consider it probable that England will hold back to avoid the responsibility of prolonging the War. It would be most desirable that we proceed likewise, thus offering to England the chance to bring about peace." I replied that it would be impossible to break off operations already begun, and that we ought not to let such considerations dissuade us from energetically carrying on the War. England had declared war on us and must suffer the consequences. Furthermore, it would be impossible to obtain new orders for the limitations of hostilities as they could only be issued by His Majesty. The Imperial Chancellor added, obviously greatly agitated, that he couldn't get such orders from His Majesty so that matters must take their course. That I, under such circumstances, could not appear before His Majesty with such an opinion is obvious. As long as a condition of war exists I must think only of using the weapons that were at hand.

bright moonlight nights for torpedo boats and mine layers to penetrate the Channel and to advance near the enemy transport steamers or near their covering forces, for to the east of the transport routes there was to be expected a far-reaching, compact destroyer protection of several rows as the undertaking of the *Königin Luise* had clearly demonstrated.

Only after breaking through these lines could the inner covering forces be reached, thus making it practically impossible to attack the transports.

Under these circumstances it was hardly possible to harass the opponent and especially so when the German battleship squadrons were held in the river mouths. The repeated appearances of the High Seas Forces on the high seas would, even if it did not result in a meeting with the enemy, have made the enemy uncertain and would have been in accordance with the doctrine of the Admiralty staff as a means indirectly adapted to hold back or delay British transports. No requests in this direction reached the navy from the army authorities. They appeared, on the contrary, to not highly esteem the to be sure valuable but numerically weak Expeditionary Force. At any rate, the chief of the general staff, in person, at the beginning of the War, in reply to a question of the representative of the operation division of the Admiralty staff, Commander Heydel, as to whether the army attached great value to the harassing of the troop transports, answered that the navy ought not to interfere with its other operations because of this opportunity. It would, indeed, be very good if the army in the west could settle accounts with the 160,000 Englishmen, a standpoint which in view of the at first favorable course of the offensive in the west was shared by many.

It has already been pointed out that prior to the outbreak of war the difficult problem of defining the activity of the army and navy and the extent of their cooperation was but little discussed. Characteristic of the uncertainty in this respect was the doctrine, equally widespread in both German and English naval strategy before the war, that no batallion could be taken across the sea as long as there existed an unconquered fleet of the opponent. Indeed in the British fleet maneuvers of 1913 this viewpoint was especially emphasized. In this connection one needs only to recall the operation of Napoleon I with his great transport fleet to Egypt in spite of Nelson's squadron to recognize the one-sidedness of the new doctrine. The often-repeated emphasis of this principle in professional circles and its application in our war games many times brought forth the statement that the British opponent must first begin with a general offensive action against the German Fleet before it would venture to send overseas its troop transports. Accordingly, perhaps, too little credence was given to the first and very uncertain reports that these troop shipments had already begun.

A further error lay in the too great concentration of all naval operation ideas on the destruction of enemy main forces to the exclusion of other forces. It might have been very important for the fleet to turn its attention first to other problems, such as, for example, furthering the land war. The history of the British Fleet in this War affords from beginning to end a series of examples of this sort of fleet activity. The furthering of undertakings of the army was recognized by the British Fleet along with the protection of its own trade and the destruction of that of the enemy as of special importance from the very beginning likewise for this reason it turned aside from greater offensive undertakings against the German Fleet, much to the general surprise. It was in a position to do this as long as its own goal of operations was not menaced by the German Fleet.

Those directing the German naval campaign considered the destruction of the English Fleet as the primary aim of the War. *For this reason the fleet was held in reserve.* This explains the fact that in spite of the psychological significance of an even temporary interruption or delaying of the transports between England and France the fundamental operation order for the North Sea did not contain this task as one of the main objects of the operations. For these reasons the actual exertions hardly corresponded to the importance of the question. The fleet command completely disregarded all cooperation of surface forces, but even the only weapon they had intended to use had already been devoted for the most part for the U-boat trip to the north. When the Kaiser's order arrived there were only four U-boats ready for battle. Furthermore, in the opinion of the U-boat command the possibilities of operation in the zone of the eastern outlet of the Channel were essentially more unfavorable than in the free North Sea. Of course the same stretch that was covered to the Orkneys would have taken the U-boats into the English Channel far across the line Dover–Calais, but, quite apart from the to be expected stronger opposition by enemy destroyers and other patrol forces, the considerable navigating difficulties of this region, the lack of navigation marks, the great number of shoals, the strong and difficult to estimate tidal current, must all be taken into consideration. One should not forget that the U-boat weapon for offensive employment still needed war training. Just to give an example: In the very first undertaking the equipment with chronometers for the determination of the ship's position meant an innovation in U-boat handling.

Therefore one will understand the viewpoint of those in authority when they at first proceeded very cautiously in the sending of U-boats into the zone of the Hoofden, which throughout the War was always the most dangerous operation zone for U-boats, the more so as the efficiency of the U-boats constantly increased. It must be regretted then that in view of the great significance which might be attached

to the employment of U-boats against troop transports those difficulties were not overcome by a most intensive employment of the U-boats or by allowing a greater freedom of action to their commanding officers. The commander in chief of the second U-Flotilla, Lieut. Commander Otto Feldmann, maintained that the advance to the south ought not to extend beyond the line Outer Gabbard-Maas Lightvessel. (See chart 10.)

On 9 August the U-boats were to be at the eastern outlet of the Channel and at dawn were to attack the outer patrol line supposed to be there, break through it, and then attack the second line of patrol forces, which it was also assumed would be there. In this way a reaction on the transports was assured such as could reasonably be expected only by the appearance of U-boats on the transport routes.

After the dispatching of these boats only one U-boat was available in Helgoland. The fourth U-Half Flotilla, which was on a practice cruise in the Baltic, commanders of which had very little U-boat experience, was at the same time recalled to the North Sea. This withdrawal from the German Bight of the U-boats for the time being was not easily consented to by those in charge of the fleet and especially so when recalling the experiences of the Russo-Japanese War and the close blockade of the Russian fleet in Port Arthur, they must be prepared for a closer blockade of the German Bight, at least for the duration of the troop transportation.

On 8 August, at 6.30 p. m., the four U-boats left Helgoland. As long as enemy opposition permitted it they were to proceed in close formation to about 53° 50′ north and about 4° 0′ east and there separate for the rest of the advance in fan formation at a distance of 12 miles.

It was assumed that they would meet the first patrol line about on the line connecting Swarte Bank and Terschelling Lightship and the second line Smiths Knoll-Haaks Lightship. (Cf. Operation order of the commander in chief of the second U-Flotilla, appendix 3 and chart 10.) It seemed probable that destroyers might be cruising between patrol lines 1 and 2 and that the U-boats here, too, would be compelled to submerge. If such were the case they were to proceed only such distance that would permit their passing the first patrol line on the return trip without recharging the batteries. With a radius of action submerged of 70 miles at a speed of 5 knots this order from the beginning limited greatly their prospects of success. To mention the most unfavorable case the boats might, in case they were compelled to submerge—dive 10 miles before the first line, reach the second with the batteries half empty. If no objects of attack were sighted there, then, according to the opinion of the flotilla commander, a farther advance would be useless if the return

trip was to be made against the tidal current as the boats would empty their batteries without making headway. In this case the trip was to be abandoned. (Cf. also appendix No. 4, considerations governing the order for the offensive of the third U-Half Flotilla.)

The accomplishment of the undertaking was considerably hampered by unfavorable weather. After the advance as per schedule the boats on the forenoon of 9 August met with a SW. wind, force 6, and so heavy a sea that the prospect for a successful attack seemed very slight. Two of the boats, *U–19*, commanded by Junior Lieut. Konstantin Kolbe, and *U–21*, commanded by Junior Lieut. Hersing, on which the half flotilla commander had taken up his quarters, found it necessary to return when 10 miles south of Haaks Lightvessel as a result of trouble with the Diesel engines.

The *U–24*, commanded by Lieut. Rudolf Schneider, did reach the line Outer Gabbard–Maas Lightvessel, but during the entire trip sighted nothing but a suspicious-looking vessel at Terschelling. The *U–22*, commanded by Lieut. Hoppe, succeeded in gathering valuable information of the Channel protection. After sighting three neutral steamers at Haaks Lightvessel, this vessel on 9 August, at 6 p. m., in the latitude of Ijmuiden sighted two steamers which were zigzagging and which finally disappeared in different directions toward the Channel and Terschelling. From their behavior it was concluded that they were part of the English scouting forces.

In the same sector the *U–22*, at 10.52 p. m., avoided two destroyers coming from the northward. About midnight it was illuminated but not seen by a vessel, apparently a small cruiser with two funnels, which headed for a short time toward her. The next morning at 8 o'clock the second patrol line was reached. In the meantime it had become clear and almost calm. Accordingly the commander decided to advance across the set line toward Schouwen Bank Lightvessel, first, however, heading for the Maas Lightvessel. Here he sighted at 10 a. m. two small torpedo boats and a destroyer. The former was equipped with a U-boat searching device. On coming to the surface again toward noon two and later one destroyer were sighted in the same locality. On the return to Haaks Lightvessel at 4 p. m. two more destroyers were sighted, which approached the *U–22* at high speed, compelling it to submerge, and thereupon turned away.

From what he had seen the commander concluded that the destroyers were at 52° 0′, 52° 10′, 52° 20′, 52° 30′ north, but that there were no other forces. On 11 August the *U–22* returned in good shape to Helgoland, where the other boats had returned the day before.

Heavy forces were not sighted on this expedition by any of the U-boats. Those in charge, therefore, concluded that it was not a question of so strong a patrol of the Channel as had been assumed

as a result of previous reports from the Admiralty staff and that a collection of stronger forces for the protection of the Expeditionary Force did *not* exist; that perhaps even the Second Fleet, instead of being off the Thames and the Downes, was being kept with the First Fleet far in the north. Furthermore, the surprising fact that even outside the entrance to the Channel strong covering forces were not sighted was taken to mean that the English landing had not perhaps as yet begun or that the necessary covering forces were much farther west than had been hitherto assumed.

It may be disputed whether the scanty information justified such far-reaching conclusions. In any case it is regrettable that a greater number of U-boats were not available for this undertaking and that the advance could not have been pushed closer to the transport route, so that at least, aside from attacks, the type and employment of the transports and their covering and protection might be determined. The reasons have already been mentioned. They were unfortunately the cause for giving up any further attempts toward an advance in the direction of the transports with U-boats. It may, therefore, be quite generally stated that the employment of U-boats for military purposes after the first groping trials was given up all too soon. The decision was made as a result of a trial carried out with insufficient forces.

Still on 9 August, before the results of the two U-boat undertakings were at hand, the fleet command had assumed that the Second and Third English Fleets and perhaps also a part of the light forces of the First Fleet were held in the English Channel by the troop shipment, while the main part of the First Fleet was supposed to be in the northern part of the North Sea. If this was actually the case, then this division offered the possibility of attacking separately the English forces and thereby obtaining a success which would with one blow accomplish the desired equalization of strength as set forth in the operation order. It was therefore earnestly considered in those days by the fleet command whether the situation did not offer a favorable opportunity, which perhaps in the course of the War would never return, for an offensive thrust of our then ready-for-battle High Seas Fleet, which would force the English First Fleet to give battle.

It would be a question of attacking with all the forces of the High Seas Fleet, including the six torpedoboat flotillas.

Because of many and important reasons, however, this was finally given up. The principal reason was the lack of information concerning the enemy and his intentions. The information obtained seemed the more uncertain as it so readily upset already established calculations. In the North Sea no capital enemy ship had been

sighted or reported. Information was lacking as to whether the troop shipment was actually going on at this time and whether the concentration of forces in the Channel was really a fact, the latter being necessary for the fleet command to assume an advance. It was accordingly a question as to whether, in view of the magnitude of the operation, contact with the First Fleet would be made at all as the coal capacity of the torpedo boats prevented an advance of more than two days and nights. Assuming a speed of 15 nautical miles and a deduction of 30 per cent for the intended great battle the fleet, taking into consideration the torpedo boats, might cover at most a distance of 250 miles in one direction. If the undertaking resulted in failure then heavy damages might be inflicted upon our forces by enemy U-boats. In this case, the undertaking instead of resulting in an equalization of forces in our favor, might turn out to the contrary. That was by all means to be avoided before the decisive battle which was expected in the near future. In may be said in passing that during the period 9 to 11 August the greater part of the British Fleet was west of the Orkneys and Shetlands (pp. 234–235 of the original German text).

Doubtless especial importance was attached to this last reason. The favorable circumstances of the separation of enemy forces were, if they really existed, just as apparent to the enemy as to the German side. The necessity for taking up the challenge existed then only if our forces threatened the Channel transport service. If, on the contrary, the German main fleet advanced against the Channel, then the enemy with his main fleet could, in case the latter was between the Firth of Forth and the Skagerrak, always appear at the right time in the German Bight and by combining its forces cut off the latter, as a glance at the map of the North Sea shows. To surprise the enemy main fleet in the north was, however, very improbable because of the numerical inferiority of our scouting forces. Therefore, one must consider the fact that the northern section of the British forces would withdraw before contact; for in contrast to the German uncertainty regarding the location of the enemy the latter was fully informed as to the location of our fleet. Not only by surface forces but by U-boats, neutral fishing vessels, and an excellent system of espionage in near-by Holland and Denmark did the enemy observe all of our movements. On the contrary, our information as to our opponent's movements was made difficult and almost impossible because of his mobility over a large expanse of sea and coast line which was closed to our inspection. The throttling of news, made possible by the insular position of England and the fear of the neutrals of English compulsory measures if they permitted news to be obtained by us from their territory, deprived us of almost every

certain piece of information concerning the distribution of the British forces.

Herein, too, the circumstances are different from those of war on land. In the latter case the enemy is bound to the terrain and its difficulties, the mobility of forces is considerably less than on the sea and can be estimated. On the contrary, the only restriction on vessels is there dependence on fuel. This circumstance, as well as the rapid mobility of forces, makes information concerning the opponent only a day old comparatively worthless. Consequently on the sea a plan of operations based on reports can but seldom be carried out. Consequently in most cases only direct scouting is of service in the opening of hostilities during an advamce, provided that it is able to break through the enemy opposition.

Never during the War was the lack of strong and numerous scouting forces so keenly felt as during the first weeks of August, after the outbreak of war, and especially so in view of the waiting attitude of the opponent. The peace maneuvers in this respect had not given correct conclusion, for in them necessarily tactical questions had been placed in the foreground, in contrast to the strategic, and in peace time one is able to estimate more certainly the intentions and the nature of the side representing the enemy.

Without a superior scouting force, however, it was not possible to make the opponent give battle if he did not desire it. The enemy could turn away at the right time; he could even withdraw into the protection of his harbors without endangering the strategic situation. In naval warfare there is an essential difference as compared with land warfare. On land the enemy forces can be either compelled to fight or to give up important positions. This is impossible on the sea if the enemy fleet does nor leave the protection of fortified harbors. A certain peculiar problem of sea warfare is the one which the English historian and naval warfare instructor Corbett neatly represented in the following simile: "One can take one's figures from the chess board, to replace them again at a given time; they remain effective, however, during the entire time."

As already stated, an advance, even though it did not result in contact with the enemy fleet, was not without danger. The opponent could, without risking his fleet, heavily damage our advancing main fleet through U-boats by day; at night by torpedo-boat attacks and mine undertakings against our return route. Obviously, such dangers in the case of an offensive advance must be considered; in the defensive, as ordered, they became, with reference to the expected battle, great restrictions for the fleet command.

If, notwithstanding the above, during the later part of the War advances of the fleet were made with a constantly greater certainty of success, even though the total strength ratio was more to our dis-

advantage, it was due, aside from the greater freedom of action allowed the fleet command, to the constantly increasing efficiency of the air force, to the increasing number of U-boats and light forces of greater tonnage, to greater speed, heavier artillery, and also the addition of two battle cruisers.

Of course, the fleet law of 1906 allowed six more large cruisers, in addition to the previous authorization, and thus satisfied a demand which had been made in 1900 by the naval administration, but without success.

In lieu of the new cruiser construction due in 1910 there was substituted for it an increased construction of battleships authorized by the fleet law of 1910. As a result the new cruiser constructions due in 1910 and 1911 were postponed another year in each case. But this program soon proved inadequate as a result of the reduction of the age limit of battleships begun in 1908 from 25 to 20 years in the interest of expediting the battleship program. The construction of the two new cruisers was finally postponed to the year 1917 and then again postponed. Hence it happened that at the beginning of the War the five cruisers of the *Hertha* and *Fürst Bismarck* classes, regardless of their complete unpreparedness for battle, were still considered as first-class cruisers. The omission of the new cruiser program was, therefore, the reason for the fleet at the beginning of the War having available only three scouting vessels for battle purposes, viz, the *Seydlitz*, *Molke*, and *Von der Tann*. The *Goeben* was cut off in the Mediterranean, and the *Blücher*, an armored cruiser, could only in an emergency be utilized in this class. In November, 1914, the *Derfflinger* joined the fleet; in March, 1916, the *Lützow;* and not until October, 1917, the *Hindenburg*. The English had available at the beginning nine battle cruisers, which later were reinforced by the fast battleships of the *Queen Elizabeth* type, with a speed of 25 knots and equipped with 38-cm. guns.

Older armored cruisers are never able to take the place of battle cruisers. Where these old ships, through necessity, were used they in most cases were destroyed, thus resulting in willing but unnecessary sacrifices.

These restrictions in material placed the commander in chief of the fleet at the start in a very unfavorable position. Even if he had desired to maneuver the enemy by using the fleet into a favorable condition for battle, he lacked the battle cruisers to carry it out. Again it must be remembered that the fleet was in reality undergoing a period of construction at the outbreak of the War. It followed from the conviction that the English Fleet would seek the battle that, first of all, consideration should be given to a maximum of fighting power in the form of battleships in the organization of the fleet; an

increase in battle cruisers had not been obtained by giving up the construction of a corresponding number of battleships.

Accordingly the commander in chief of the fleet decided not to risk the entire High Seas Fleet until comparatively accurate information concerning the enemy and his intentions was at hand. Important information in this matter was expected by him on the return of the 14 U-boats then en route, either that they had met and damaged the enemy or that in the wide area covered by them there were no enemy forces at all.

These undertakings could but little lessen the darkness. To obtain more information, the U-boat exploration must be resumed. When on 14 August the Second U-Flotilla was given two new tasks, at the same time the commander in chief of the fleet sent along, with the copies of these orders, the following statement concerning the strategic situation and the operation views arising therefrom:

"The reports concerning the English forces confirm me in my belief that the behavior of the English is guided by the principle that for the present they will avoid any serious contact with the German forces to insure themselves against loss and later to throw their fleet into the scales at a time because of special political or other reasons would be suitable to them.

"At present, I regard it as the mission of the High Seas Forces to inflict losses on the enemy by all the means known to petty warfare, thus forcing him within the range of the High Seas Fleet sooner than he otherwise perhaps intends."

In a letter of 19 August, the chief of the Admiralty staff discussed these views of the commander in chief of the fleet very fully without, however, pointing to the fact that the greatest incentive to a more offensive activity on the part of the opponent could only result when the latter considered the prospects of meeting the German Fleet at sea probable. He expressed himself as follows:

"I also share the view that at this time it is the intention of England to so maneuver her forces to avoid serious damage and to avoid contact. The might and influence of England is dependent on her fleet, and her world position would be seriously impaired in the case of serious damage to the same. Her intention is, therefore, based on an economic struggle in which she hopes to remain the victor. It would not correspond to the operation order as issued to seek a decision far from our coasts.

"We would thereby give up the advantages afforded by the closeness of our ports and increase our losses through damaged vessels. The decision must therefore be postponed until the opponent comes into the vicinity of our coasts.

"I consider it probable that public opinion in England will in time force their fleet to an offensive. At all events this probability must

be considered. Until this meeting takes place, however, there remains only, as Your Excellency has in mind, the injuring of the opponent by all the means known to petty warfare, thus forcing him, if possible, to strike an energetic blow. But in this event it must also be remembered that an injury to our own forces must be guarded against to a greater extent than in the case of the opponent, that our fleet may enter the decisive battle unweakened."

From the now planned U–boat undertakings such losses were expected to be inflicted upon the enemy as would force him to a closer blockade of the German Bight, thus causing him to give up the defensive so undesirable for us. At the same time these undertakings, through their observations of the enemy coasts, was to pave the way for the beginning of mine-laying expeditions against the enemy's coast. Two U–boats were again to attack the English patrol forces supposed to be maintained on the line Egersund–Peterhead and to search the region off Moray Firth and Firth of Forth. At the same time another U–boat was to proceed to the mouth of the Humber in order to destroy heavy forces supposed to be there. Destroyers were to be attacked by the U–boats only if during the operation no other opportunities for attack presented themselves. At least before the return some traces of the successful presence of German U–boats were to be left behind on the English coast. In other respects the U–boats were allowed great latitude as to the carrying out and duration of the undertaking.

The *U–20* and *U–21* were assigned to the duty in the north by the flotilla chief of the Second U–Flotilla, as their engine plants seemed best suited for the considerable demands necessitated by the long advance into the zone of operations. Together they were first to approach the Norwegian coast and then at a distance of 15 miles were to seach the supposed English base line for enemy forces. After reaching the Scottish coast the *U–21* was to proceed to the Firth of Moray (Cromarty Firth), the *U–20* to the Firth of Forth, if the condition of the boats permitted. Not until then was the return trip to be made. (Cf. Operation order of the Second U–Flotilla, appendix 5.) More success was expected from such procedure, in view of the small number of U–boats available than from a flank attack on the enemy's base line. The latter method had of course the advantage that even in view of its hardly known position the enemy base line could be reached if only they pushed far enough north. It presupposed, however, on the other hand, an even greater number of boats if the enemy line was not passed at too great distances and in this way missed enemy forces. For the employment of boats from the Norwegian coast outward the deciding factors were shorter distances to be covered as compared with the line Helgoland–Peterhead. Further, also, the possibility, if the weather were bad

or for the repairing of damages to engines, of finding shelter close to the Norwegian cliffs. However, it was expressly ordered that Norwegian neutrality should be strictly observed.

Both vessels were to leave Helgoland together on the afternoon of 15 August (cf. chart 11), but they lost sight of each other when darkness fell, as the progress of the *U–21* was retarded by work on the oil engines. Nevertheless both boats reached the Norwegian coast on the afternoon of the following day without, however, meeting again. Their observations during the trip were very different. While the *U–21* as far as it went made no observations that were at all unusual, at Horns Reef brisk neutral steamer traffic was observed by both boats. The *U–20*, commanded by Lieut. Dröscher, on which the half-flotilla chief, Lieut. Albert Gayer, had taken passage, in the latitude of Limfford, on 16 August, at 4 p. m., alleged to have sighted a cruiser and a torpedo boat without an attack having been possible.

On the Norwegian coast the latter boat had found active steamer traffic toward noon. One of the steamers attracted suspicion because of its constantly changing course and was taken to be a patrol vessel, a supposition that seemed to be justified when a destroyer came up. An attack on the destroyer had to be given up, as it ran away at high speed. Scarcely had the steamers been avoided by changing course to the southward when clouds of smoke appeared, followed immediately by shells which struck very near the vessel, compelling her to submerge, the attacking party being more closely observed through the periscope. Consequently the line Egersund-Peterhead was not reached until 17 August, 8.30 a. m. Four black buoys similar in appearance, which probably served the English patrol forces as aids to navigation, presumably indicated the position of the enemy blockade line. Unfortunately the half-flotilla chief, immediately after arrival on the line, as ordered, was compelled by compass and engine troubles to take a southern course until the troubles were remedied. On this course a destroyer was again sighted at 11 a. m. The commander of the U-boat believed that in view of the injury to the engines that they were not equal to a 600-mile trip to the Firth of Forth and thence back to Helgoland. The undertaking was given up at 5 p. m., and the course set for the German Bight.

In the opinion of the flotilla chief favorable conditions for a rapid advance no longer existed, as there was apparently a systematic search being instituted by English destroyers as a result of the long-distance scouting of the First U–Flotilla. On the other hand, the *U–21* as far as the Scottish coast did not experience any opposition.

As compass and engines worked unsatisfactorily during the night, the *U–20* resolved on the following morning to make a new advance to the west. Pursued by vessels, as on the day before, and compelled

to continually submerge until the following day, the boat finally abandoned the trip. On the afternoon of 19 August it entered Helgoland after a cruise during which it had daily been in a submerged condition from six to twelve hours.

The *U–21*, commanded by Junior Lieut. Hersing, suffered considerably less from enemy opposition and was able to perform its task without fighting. On 17 August, at 4 a. m., the boat headed for the base line Stavanger-Kinnaird Head, but sighted there only two steamers. On 18 August, at 6 a. m., it stood off Kinnaird Head. Here the *U–21*, aside from active steamer traffic, observed a patrol line of fishing steamers that extended from Kinnaird Head in a northwesterly direction, thus protecting Moray Firth. About 20 miles behind there was apparently a second line, and, to judge by the clouds of smoke, there was also a third line at the same distance behind the second. In the afternoon the first line was in charge of a destroyer. Because of the great distances apart of the three lines it was considered doubtful as to whether the boat could make this distance and return without recharging her batteries. Accordingly, a northern course was taken, and at the beginning of darkness an attempt to break through on the surface was made. Shortly, amongst the numerous ships going in and out, a destroyer, as well as a large number of patrol vessels, were sighted. As the exceptionally strong illumination of the sea made by the patrol boats might easily betray the vessel, the attempt to break through was again given up. Because of the equally strong patrol at the same place it was considered that there would be no prospect of penetration on the following day, and, therefore, as nothing worthy of attack had as yet been sighted, the retreat was begun. In so doing the coast was followed southward until darkness in order to obtain an idea of the organization of the coast defense. Besides, a large number of English and neutral vessels were sighted off Peterhead and Aberdeen, the majority of which doubtless were engaged in fishing, but some, to judge by their actions, were on scouting and patrol duty.

Outside the Firth of Forth shortly before darkness four destroyers were made out north of May Island, which were steaming at slow speed up and down outside the bay. Poor visibility conditions, however, prevented an attack.

On the lines Newcastle and Sunderland to Skagen and Norway several steamers were made out and on Dogger Bank several fishing steamers were sighted. After a cruise, even then unusual for U-boats, of 1,300 miles, covered in seven days, the vessel entered Helgoland in good shape, during the forenoon of 21 August.

The difficult task of attacking forces off the mouth of the Humber was assigned to the *U-22*, whose commanding officer, Lieut. Hoppe, seemed especially fitted because of his first undertaking in the Hoof-

den. His task was, besides damaging the opponent, to make observations on the enemy's coast patrol. If the enemy opposition off the Humber should be too strong to attempt an attack then it was left to the discretion of the commanding officer to make an advance toward Newcastle. After leaving as planned during the afternoon of 15 August, on the forenoon of 16 August the boat stood south of Dogger Bank and sighted there numerous fishing vessels concerning which it was doubtful how far they were employed on patrol duty or merely engaged in the fishing trade. At times the commanding officer believed, because of the numerous clouds of smoke in sight, that he was between two patrol lines of fishing steamers, distant about 60 to 65 miles from the coast. He therefore gave up any further advance and spent the night, for safety's sake, submerged at a depth of 20 m. On the next morning he succeeded, however, apparently unseen, in passing the fishing steamers and set course for the English coast at Flamborough Head. There suddenly appeared only 600 m. away from the *U-22* an English U-boat which for a short time had her conning tower and a short periscope awash, apparently a vessel of the B-class. By zigzagging the German boat escaped the attack and then found opportunity to come to the surface, and as she was apparently taken by passing ships for an English U-boat, to observe the active merchant vessel traffic off the Humber. In the afternoon it was finally compelled to submerge for a longer time by two destroyers coming from the north. The next day it was the same story. Aside from some destroyers not a single enemy warship was sighted.

The next night was spent lying on the bottom in order to rest the crew after their exertions. As a long stay off the Humber, judging from previous observations, made a meeting with English warships appear quite improbable, on the next day at dawn it was decided to proceed to the Tyne, when leaks as well as troubles with the oil engines occurred and necessitated an immediate return. On 20 August, at 6 a. m., the boat again entered Helgoland.

Thus ended the three long-distance operations of the *U-20*, *U-21*, and *U-22*, in that none of the boats had an engagement and none of them sighted objects worth attacking. On the other hand, all the observations were valuable to the fleet command in estimating the entire situation. While it had been ascertained that the assumed patrol line Peterhead–Egersund did not necessarily exist, the presence of destroyers off the Skagerrak as well as a destroyer protection off the Firth of Forth were established. From the presence of the latter it could be concluded that valuable forces were in that bay. Also off the Firth of Moray there was observed a protective line consisting of several rows of fishing steamers. In the Humber, however, only older destroyers (E-class) and U-boats (B-class) seemed to be stationed. There were no obstructions at either the entrance to the

Humber or the Wash, judging from the unchanged courses of the merchantmen entering and leaving. From Cromer to Whitby even the lighthouses were in operation; the light vessels were apparently withdrawn. Opposition by aircraft was nowhere observed.

Of especial significance, however, was the fact that the U-boats again had found no opportunity to attack. Hence the fleet command, although the results of only two long-distance U-boat undertakings hardly justified it, drew the following important conclusion:

"The English Grand Fleet and probably all warships, in general, worth attack by U-boats are kept at such a distance from the German coast that seeking these forces exceeds the technical effectiveness of the U-boats. Ports to be considered as bases for the replenishing of matériel appear to be so strongly guarded that for U-boats to enter is out of the question (Firth of Moray). A longer lying-in wait off the ports is not possible because of the distance. Further U-boat undertakings are therefore to be given up until it is to be assumed that the English Fleet has come nearer."

This conclusion was premature after the experience of the Russo-Japanese War, where the heavy forces gave up, continually staying in definite areas and operated only in the form of occasional attacks, a method that made it extremely difficult for the opponent to determine their presence on the sea. It meant, unfortunately, a turning point not only for the use of U-boats but also for the entire conduct of the naval war in the North Sea. The previous expeditions had always had the English Grand Fleet or parts of it as their objective. Because of the very scanty news of the enemy the assumption was made that these forces were being kept at an unattainable distance from our bases. A communication on this matter from the Admiralty staff on 17 August reads as follows:

"1. On 16 August, at 3 a. m., numerous English warships (60), apparently for the most part large vessels, were met by a Norwegian steamer 3 nautical miles from Hvidingso (at Stavanger) as they lay there. This confirms the conjecture made in the "Sachlage"[12] (state of affairs) of 12 August that near Stavanger was the end of a blockade line lying toward the Scottish coast. The region of Stavanger appears to be a frequently used place of assembly for English naval forces. It can usually be counted on that English forces (even cruisers) can be met here. Possibly even the patrol of the Skagerrak begins at this place.

"2. Concerning the movements of the Grand Fleet stationed in the North Sea, no more reports have been recently received. The First Fleet, according to dependable observation, on 1–2 August was coaling in the Firth of Forth, and thereupon cruised, chiefly toward

[12] In the "Sachlage" the most important items of information affecting the conduct of the naval war were daily given out by the Admiralty staff.

the western coast of Norway, as far as Aalesund, in doing which they were frequently seen, the last time on 7 August. Their average speed was about 10 knots. Assuming that they only consumed half their coal, it must be necessary to coal every 10 or 11 days. Therefore they must have coaled about 12 or 13 August and again about 22d or 23d. Whether the Grand Fleet coals every time together or by divisions is doubtful. If the latter is the case, then the bases (Firth of Forth, Moray Firth, perhaps also Tyne) are more often used than every 10 or 11 days. The prospects then would be greater for damaging the separate divisions of the fleet upon their entrance and departure by mines and U-boat attacks.

"3. According to English newspaper reports the eastern coast as a result of our mine undertaking against the Thames is said to be patrolled by large numbers of destroyers. Whether this news is only to quiet the public mind or represents the facts, as seems possible, is not known."

Even these reports of the enemy had always turned out to be so uncertain and indefinite that it did not seem possible for the fleet command to construct on them large scale undertakings. According to their opinion, on the contrary, a success in the future was only to be expected if it was possible through petty warfare to cause the enemy to assume the protection of his coast with strong forces. Only then would objects suitable for attack by submarines and other vessels be present. Meanwhile it was hoped to remedy this lack of sufficient and, for the conduct of the war, absolutely necessary information of the enemy by assigning to the U-boats more than hitherto the task of ascertaining the enemy's procedure outside river mouths. The observations of the *U–22* off the Humber had shown that U-boats were well adapted for this purpose.

Further undertakings clearly gave evidence of this line of thought. In contrast to those that had preceded, they had the pronounced characteristics of petty warfare. In changing to this type of strategy, followed because of the supposed conduct of the opponent, one must be clear about one point, namely, that this renunciation of major operations must have reacted on the spirit of the already disillusioned crews of the battleships. Accordingly the commander in chief of the fleet caused information to be given the men in a day order concerning the situation. As this order is a reflection of all previous considerations and also gives an insight into further operation possibilities it ought, even at the risk of repeating what has already been said, to be added verbatim:

"All information that we have received about the English forces is to the effect that the English battle fleets entirely avoid the North Sea and keep themselves far outside the range of our forces. The undertakings of our brave U-boats extending northward to the 60th

degree of latitude and southward to the entrance of the English Channel as far as the Thames, and the advances of our torpedo boats and aircraft have confirmed the fact that only between the Norwegian and Scottish coasts and off the entrance to the English Channel are English patrol forces patroling, but that in the rest of the North Sea so far not an Englishman is to be found.

"This behavior of our enemy permits the conclusion that his intention is to escape the losses which he fears from us and to endeavor to force the approach of our battleships to his coast and so fall victim to mines and U-boats.

"We must not give our enemy this pleasure. In the end they must and will come and then there will be a reckoning. And for this reckoning we must be ready with all our battleships.

"Our task is therefore to inflict losses on our enemy at every opportunity by all possible means of petty warfare, thus causing him to give battle to us. This task must in the first place be intrusted to light forces (U-boats, torpedo boats, mine layers, cruisers), the prospects for which improve as the nights grow darker and longer.

"The spirited deed of our mine steamer *Königin Luise*, which ended in her glorious sinking after seriously damaging the opponent, and the clever advances of our U-boats have already made the beginning. Further undertakings will follow.

"Our duty on battleships of the fleet is to keep our chief weapon keen and sharp for the decisive battle which we will have to fight. For that we must with all devotion and with determination continue to work for ourselves and for the perfection of battle preparedness of the ships in all ways, think over everything that is to the slightest extent connected with the War, and drill and prepare for the day on which the High Seas Fleet will be enabled for the sake of our beloved Kaiser, who created this weapon on the sea for the protection of our dear Fatherland, in full confidence in our military efficiency acquired by diligent labor in time of peace, to take up the battle with the numerically superior opponent.

"In view of the military spirit which permeates our army and also the crews of all vessels and which is ardent for early activity, it is a hard trial for the patience to which the conduct of our opponent forces us.

"As soon as the enemy is within reach he must find us ready. So we must not let the time and place be prescribed by him, but choose both ourselves, so that they will be favorable for a complete success.

"Therefore it is a question of not losing patience but of being ready at all times to use the favorable moment.

"And then 'on with God,' who will give us the victory."

Further undertakings had accordingly the purpose of inflicting losses on the enemy by all the means of petty warfare wherever it

was possible to do so. To this was linked the to be sure rather uncertain hope of inducing him to assume a closer patrol of the German Bight and in the engagements then arising in the blockade defense to give battle under favorable conditions to ourselves.

The previous U-boat undertakings, as well as the repeated scouting of small cruisers and torpedo boats from the outpost position, which extended almost to a distance of 120 miles from Helgoland, had shown that the German Bight was in no way blockaded, and hence there was a clear path for surface forces. The next task was therefore to fall upon the latter.

The only region in which contact with the enemy forces had been made, as the *U–22* had established on 10 August, was the Hoofden and the eastern channel exit. There alone the enemy was obliged to have a definite arrangement of destroyer protections for covering his troop transports. Therefore against this was to be directed the next attack. On 14 August the commander in chief ordered that on the 18th two small cruisers at dawn should take up a position at or, if possible, somewhat south of the assumed farthest north English destroyer line at about 52° 30′ to make a surprise attack on the destroyers. After a short energetic thrust the cruisers were to return. At the same time two U-boats had to assume waiting positions, as evident from chart 12, so that one boat would be north and one south of the 53d degree of latitude. From here they were to attack enemy vessels that perhaps might follow our returning small cruisers and by these be decoyed to the waiting positions of the U-boats. The U-boats were not to leave their zone of action until their own cruisers had passed by on the return trip without enemy forces pressing after them, at the latest, however, on 18 August, at 4 p. m. From the standpoint of navigation it was to be considered that the region of square 125–x, supplementary No. 6, and vicinity was strewn with mines by the *Königin Luise*.

The commander of the scouting forces intrusted this task to the small cruisers *Stralsund*, commanded by Capt. Harder, and *Strassburg*, commanded by Commander Retzmann. To these were assigned the U-boats *U–19*, commanded by Lieut. Konstantin Kolbe, and *U–24*, commanded by Lieut. Rudolf Schneider. In command of the forces was a senior officer, the commander of the S. M. S *Stralsund*. The latter decided that the advance from Helgoland was to begin on 17 August, at 8 a. m., at a speed of 12 knots, both U-boats being attached to the *Stralsund*. The *Strassburg* by day was to keep within sight to the north, by night following in the wake of the *Stralsund*. In order to remove all uncertainty of location and leave the cruisers in no doubt as to the actual position of their own U-boats, these were to be conducted by the cruisers themselves to their waiting positions. Both cruisers were to so arrange that they

could pass through the supposed enemy patrol line during darkness, and when on the return at dawn attack, if possible, under light conditions which on the one hand permitted bombarding enemy torpedo boats without searchlight illumination and on the other made it impossible for them to approach unobserved.

Superior forces were to be avoided, the idea being to lure them on to our U-boats. Special caution was ordered in the use of radiotelegraphy during the undertaking. It was not to be used until after 4.30 a. m. unless prior to that time a German cruiser was sighted by the enemy and reported by radio. As this was the first long-distance undertaking of surface craft in the War, it is well to discuss somewhat this plan. The undertaking represents a first attempt at a more extensive offensive with surface forces in the rôle of petty warfare prescribed in the operation order, and as such shows all the weaknesses of an operation plan which first of all forbade a stronger quota of forces. It was not desired to venture too much at a time, and only two small cruisers were sent, whose best protection against meeting superior enemy forces was to be a surprise arrival at the scene of operations. On the contrary, support by both U-boats from their waiting positions could not be regarded as of value. It is necessary to be clear on this point that the slight numerical strength of the forces employed rendered inadmissible from the start a complete success.

Still more serious must the situation of the cruisers employed seem if one considers that the place of the presumed meeting with the enemy was assumed to be about 150 miles from the nearest base. For this reason it was ordered that the S. M. S. *Kolberg*, commanded by Commander Widenmann, at dawn should take up her position at 1678, supplementary No. 7, about 30 miles northwest of Terschelling, and at the same time three battle cruisers in Schillig Roadstead should be clear with steam up in all boilers for immediate departure, a measure which gave only moral support to the protection of the far-advanced small cruisers.

At the time, however, still in the expectation of an enemy attack on the German Bight, they could not decide to detach a larger number of small cruisers and torpedo boats from the protective work there for offensive purposes. Still less did they believe that dreadnoughts ought to be employed in carrying on such undertakings at sea. They considered themselves in this respect not quite justifiably bound by the operation order, and in overestimating the prospects of success of enemy U-boats showed an unconquerable timidity of exposing dreadnoughts to their attacks. If the efficiency of enemy U-boats was placed so high, then—although the cruiser, because of its slighter momentum, could more easily avoid a torpedo than a battleship—it is not quite understandable why it was not considered necessary to

furnish the cruisers at least a number of torpedo boats, say a half-flotilla. The latter would, quite apart from their task as U-boat protection, be a further increase in strength of the fighting power of the forces used, especially at night, and perhaps could have utilized more fully favorable opportunities for attack.

It required longer war experience before they could reach the point of a fundamental support by sending the entire fleet to sea even when comparatively small numbers of surface forces were advanced from the zone of their own bases if it was desired to take advantage of our prospects of success and to avoid reverses. In view of these technical deficiencies in planning the actual outcome of the undertaking must be qualified as fortunate.

With fine clear weather and a light northern wind the advance began as planned. (See chart 12.) Toward 2 p. m. came a radio report from auxiliary mine layer *C* that three submerged enemy U-boats had been sighted directly off the Jade, a report that must have been very unpleasant to the commander of the cruisers. In view of the then prevalent opinion, he could assume that our own forces would leave the Jade for his support only under the most urgent circumstances. However, toward 4 p. m. the report was contradicted as a false alarm by the flagship of the commander of the scouting forces. A further radio report at 8 p. m., stated that a Dutch fishing lugger on 16 August in the forenoon saw two small English cruisers with four funnels at 0818, supplementary No. 7, about at the southeast corner of Dogger Bank. In case this report proved true there was the possibility that our cruisers at the first enemy radio report concerning their presence in the Hoofden could be cut off there by enemy forces.

At 8 p. m. the *U–19* was dispatched to the northern waiting position. The cruisers separated, and shortly after 4 a. m. passed the *Stralsund* after they had stationed the *U–24* at the southern waiting position. The location of the supposed patrol line was reputed to be at 52° 30′ north. Nothing was seen of the enemy. On the contrary, the *Strassburg* at about 1.30 a. m. had to go around several vessels, showing red and white lights, from which signals were apparently being given to vessels farther back.

The *Strassburg* made a further advance of about 30 miles, *Stralsund* about 35 miles, southeast of Yarmouth. When, at 4.45 a. m., both cruisers were returning at a distance of 35 miles apart, speed 25 knots, the *Strassburg* believed it sighted a small enemy cruiser off the port quarter. The vessel was, however, immediately afterwards recognized as a merchantman and the wireless signal already given about sighting an enemy cruiser was contradicted. One and one-half hours after this false alarm the *Strassburg* really did encounter the enemy at 0070, supplementary No. 6, about 20 miles east of Smiths Knoll

Lightship. There were three enemy U-boats, apparently of the D-class, one of which had just submerged, while the other two boats when submerging were fired on at a range of from 85 to 100 hm. successfully in that one of these boats at the second well-placed salvo suddenly disappeared under the water with great heeling and a high projecting stern, developing at the same time much steam and smoke. Whether this sudden and rapid sinking was due to a hit or was intentional could not be positively determined on account of the great distance. The observations made were transmitted by radio to the other forces as follows:

"Enemy U-boats apparently establishing a U-boat line in the latitude of Haaks Lightship *Strassburg*."

Shortly thereafter the *Stralsund*, at 6.39 a. m., sighted east by north 8 to 10 destroyers of the *Mohawk* or *Archer* classes and to the southeast 8 more destroyers with a small cruiser of the *Amphion* class, which apparently, running toward each other, were endeavoring to join forces. (Cf. Chart 13.) Fire was immediately opened on the destroyers coming from the north and, when the distance had increased from 103 to 120 hm., on the southern group only 85 hm. away. The enemy, too, was not inactive. Soon the wakes of four torpedoes were observed, three of which passed astern while one stopped short. His gunnery was no more effective, almost all shots falling 50 to 2,000 m. short of the vessel, while only three to four shells struck in the immediate vicinity. Salvo firing was not observed. On his part the enemy tried to avoid the shells of the *Stralsund*, while the distance was increasing by changing course and speed, which first of all created a purposeless impression.

Nevertheless two boats were obviously hit, one of which, enveloped in a thick grayish black cloud of explosive smoke, was still able to keep in the formation of its flotilla, while another boat of the flotilla last fired on remained behind without being supported by the other boats. The commander of the *Stralsund* soon thereafter had to break off the fight when a second cruiser had come to the support of the first convoy cruiser and the destroyers had turned away to the southwest as neither *Strassburg* nor *Kolberg* could support in time and the *Stralsund* alone could not hold out longer against an enemy considerably superior in numbers. If a greater number of forces had been used for this undertaking probably a complete destruction of the English destroyer line would have been attained. Of our own forces at the beginning of the fight only the *U–24* was in the immediate vicinity of the *Stralsund*, a proof that the waiting position of this U-boat was well chosen. After a long, submerged trip to the waiting position this boat, at 6.30 a. m., sighted our cruiser on the return and had to come to the surface to follow it when the latter, at a position 3,000 m. north of the *U–24*, suddenly opened fire on what appeared

to be two enemy destroyers. From the boat only clouds of smoke could be made out. The *Stralsund*, too, occupied with the fight, developing at maximum speed with the numerous opponents unfortunately omitted to inform the U-boat by radio, which on account of the great distance could get no correct idea concerning the location of the fight, the aim, and nature of the opponent, as well as the intended course of the fight. As the *Stralsund* and likewise the *Strassburg*, which later came into sight, at maximum speed headed for the north, the U-boat commander supposed that both the cruisers were chasing an enemy that was north of them. Left to itself the U-boat submerged, then headed for the *Stralsund* and maneuvered, when it could not follow the latter, for the clouds of smoke which, however, went so rapidly toward the southeast that the boat because of its slight submerged speed had to give up the attack. When it came to the surface at 8 a. m. the smoke clouds were out of sight and of its own cruisers only the *Strassburg* was barely discernible on a northern course. When to the southward no enemy vessel appeared the return trip was begun, which was accomplished without further events.

Of the cruisers at the beginning of the fight the *Strassburg* was about 28 miles; the *Kolberg*, on the other hand, 80 miles distant, from the *Stralsund*. Only the former could, therefore, if conditions had been favorable, have participated in the fight. To this end the *Stralsund*, at 6.55 a. m., had sent the following radio to the *Strassburg:* "Close in; am engaged with destroyers 021X.—*Stralsund.*"

It repeated the signal for the *Kolberg* about 7 a. m. without the enemy disturbing this exchange of signals. It also succeeded in getting the wireless signals through in spite of the attempts at interference on the part of the opponent. On the first wireless report the *Strassburg* tried immediately to close in at a speed of 26 knots on an east-southeast course and soon thereafter sighted on the starboard bow at a distance of about 25 miles two heavy clouds of smoke without it being possible to make out which belonged to the *Stralsund* and which to the destroyers. The radio gave no information as to whether the *Stralsund* was in front of or behind the destroyers. Supposing the most unfavorable situation, the commander of the *Strassburg* came to the conclusion that the *Stralsund* was behind a screen of destroyers and could best relieve the *Strassburg* by taking a position forward of the foremost cloud of smoke. At the same time, 7 a. m., a radio was sent to the *Kolberg:* "7 a. m.—Engaged with destroyers. Close in 014X.—*Strassburg.*"

Unfortunately the course chosen did not pass through the actual position of the *Stralsund* as the *Strassburg* was not sufficiently informed. The destroyers had left an opening to the south and it would have been more to the point to prevent their escape by closing

in that direction. The attempt did not succeed in drawing the English cruisers past our own U-boat waiting positions because of their withdrawal.

Even at 7.30 o'clock the situation was so little understood by the *Strassburg* that it sent the following radio message to the *Stralsund:* "Are you in front of or behind the destroyers? How many destroyers?—*Strassburg.*"

To this the *Stralsund* replied: "Enemy forces 020X, 10 destroyers, 2 small enemy cruisers on a western course.—*Stralsund.*"

Meanwhile the *Strassburg* had advanced so far that it could see the scene of action. Contrary to the assumption, the *Stralsund* was in front of the enemy destroyers, which gradually dropped astern. Immediately thereafter the *Stralsund* reported by radio that the English forces were withdrawing into the Channel on a western, later southwestern, course and that the *Stralsund* had broken off the fight. Both cruisers, therefore, continued the return trip together. The *U–19* at its northern waiting position had found no opportunity to participate in the fight, the course of which it could only follow by the smoke clouds. Soon thereafter our own cruisers passed without the enemy vessels pursuing them. Even in proceeding submerged southward until 9 a. m. The *U–19*, proceeding submerged on a southerly course until 9 a. m., encountered no more enemy vessels.

A fishing steamer followed the German cruisers from 9.10 a. m. on, but finally passed out of sight. Later another fishing steamer was detected in the same observation service. The remainder of the return trip was uneventful.

The first radio signal from the *Stralsund* concerning the enemy found the *Kolberg* still advancing to the position it was to assume at 1678, supplementary No. 7. The latter immediately advanced toward the signaled location of the *Strassburg* and met both vessels after repeated exchange of position reports, only, as was to be expected, long after the fight had been discontinued and at about 8.45 a. m., about 20 miles northwest of Texel.

It is characteristic of the then prevailing feeling of safety from enemy attacks that the senior cruiser commander did not consider it necessary to keep the ships together at least as far as the mouth of the Ems. U-boats and the mine danger alone might have placed a single vessel, not even accompanied by a torpedo boat, in very unpleasant situations apart from the fact that a further meeting with surface forces was always possible. However, the three cruisers on the afternoon of 18 August reached the river mouths in good shape, while the U-boats did not return to Helgoland until the next morning.

The engagement was thoroughly examined on the basis of the radio reports by the staff of the High Seas Fleet and that of the commander of the scouting forces. A query of the commander of

the scouting forces as to whether the vessels needed support was answered in the negative by the ships; indeed, it lay beyond the realm of possibility. Thereupon the intention to go out with the battle cruisers so that in any case they would be at sea if the bar were impassable because of low water was abandoned, especially as the later reports of location from the cruisers showed that they were then returning to the Jade and Ems.

This first encounter of our cruisers with the enemy furnished, of course, a series of valuable experiences concerning the behavior of the opponent and the cooperation of our own separated forces under war conditions, experiences which immediately were put into practice.

What had been established through sighting enemy forces gave rise to the following suppositions as to the manner of the Channel patrol:

"At night there seems to be a destroyer patrol line about from Yarmouth to Haaks Lightship and by day this is replaced by a U-boat line. The assumption of the various positions appears to be accomplished in such a way that when it is dark the destroyer line collects to the east and at the same time the U-boat line is laid out from the west. This is supported by the fact that at dawn the *Stralsund*, standing to eastward, encountered destroyers, while the *Strassburg* to westward found only U-boats. Further a ship was sighted by the S. M. S. *Strassburg* at about 0488, supplementary No. 1, that perhaps was stationed as a position or guard vessel indicating the center of the U-boat line.

"Besides this the *Strassburg* in the vicinity of square 1648, supplementary No. 7, saw three vessels with white and red lights, which apparently were giving light signals to vessels farther back. The S. M. S. *Stralsund* did not observe such light signals. It is possible that they were only ordinary fishing vessels, but it is not inadmissible that unsuspicious vessels (fishing steamers or sailing vessels) have been hitherto been given advance positions as observation vessels."

Further the method of the enemy destroyers of making shooting difficult by sudden course and speed changes as soon as salvos struck in their vicinity was recommended for imitation in cases where the distance was great.

For the rest the English destroyers had at the great distances seemed for a time so deceptively similar to German torpedo boats that the *Stralsund*, although from the general situation the presence of its own boats was very improbable, at times stopped firing in the belief that its own boats were engaged with English destroyers ahead of it. Special attention was therefore to be given to the frequent sending of recognition signals by torpedo boats in approaching their own forces. The method needed elaboration. It was believed that

the call of the English destroyers had been made out as the international Morse call, "What is the ship's name?"

Especially welcome were the radio experiences; they had shown the superiority of the German process in so far that the *Stralsund Strassburg,* and *Kolberg* experienced no disturbing influence either from the numerous destroyers or from the two convoy cruisers. First of all not once was the attempt to do this made, yet, such endeavors when tried later by several English stations did not succeed. Apparently aware of the disturbing communications of our cruisers, they began to disturb the limited German radio communication by transmitting three place signal groups. But our high and pure tone was always clearly and without difficulty read in spite of the English attempts to disturb. On the contrary, the German cruisers apparently succeeded for some time in effectively disturbing English radio communication by using their wave length and tone quality; in fact, the enemy sending stations frequently changed to other waves, from 650 meters to 1,100 meters, to 900 meters, and finally again to 650 to 670 meters in endeavoring to get their signals through. It must seem especially remarkable that in doing this their signals (calls for assistance) were given entirely in plain language and in the same form finally repeated at 8 a. m., by a stronger English land station or passed on and, indeed, so distinctly that the signals could easily be picked up by our vessels lying at Wilhelmshaven.

For example, the S. M. S. *Preussen* picked up the radio message: "Captain first flotilla reports first-class cruiser chasing flotilla; can squadron support?"

To judge by the tone, strength of sound, and manner of sending it might have been the large station at Poldhu.

As it was not customary in the procedure of the opponent to send radio messages in plain language, this must be considered as an intentional deception to cause our cruisers to retreat.

In spite of the technically satisfactory signal communication, however, the cooperation of our own separated forces was not so gratifying, as the *Stralsund* did not succeed in transmitting with sufficient accuracy to the other cruisers and U-boats its own position with reference to the enemy and the direction of the fight for them to reach the scene of action by the shortest route and to appear on the right side for cutting the enemy off. It must be admitted, however, that perfection in this line during the rapid events of battle was very difficult of attainment. It is only necessary to call to mind the events on the bridge of a small cruiser at such times. While the chart house, bridge, and compass are shaken by the firing of our own salvos and the impact of enemy shots, along with other battle activity, our own position as well as that of the enemy must be represented on the chart and the course of the opponent obtained by bearings and measurements.

According to this the commanding officer determines what report is to be sent. Then amidst the noise of battle it is telephoned to the radio room and must there, in order to keep it secret from the enemy, be coded according to a frequently changing method by the radio officer before it can be sent. In the same way the receiver of the telegram must laboriously decode in case further inquiries do not make the repeated sending of the signal necessary. Only then can the report be transmitted from the radio room to the receiver on the bridge. In regard to this difficult signal intercourse those in charge of the naval war stated with reference to the scouting service as follows: "The chief duties of the scouting service are learning the position, strength, and movements of the enemy, making contact, maintaining contact, and the sending of rapid and reliable reports to its own forces so that the latter may at all times direct their movements accordingly." However, it turned out in this case as on all later occasions that even in this field the following sentence of Clausewitz is particularly justifiable:

"Action in war time is motion in an impeding medium. As one is so little able to make the most simple and natural movement in the water, even moving with ease and precision, just as little can one in war time with ordinary forces even hold to the end in view. Only growing accustomed to war facilitates matters."

Still we can frequently show just how the correctness and clearness or, otherwise, errors of the first cruiser reports influenced the following battle actions most essentially.

It is also worthy of note that the U-boats, although one of them was at the start in an extremely favorable position, did not come to the attack. Because of the slight field of vision of the U-boat, even on the surface, and the small speed under water nothing else was to be expected from participation in an engagement with very fast forces.

For the rest the task can be regarded as having been carried through with considerable success. In spite of the numerical superiority on the side of the enemy he did not keep up the fight. It did not seem sufficient to him to insure from the start a result in his favor. *The English on the sea during the entire war made it a point to avoid all losses on their part through inconsiderate participation.* Hence in this case, too, his destroyers were chased away by the *Stralsund*, and in contrast to us the enemy did not succeed in making hits either with his guns or torpedoes, and our radio signal method showed itself to be superior. We had become acquainted with the light forces of the enemy in battle and felt ourselves with justice to be thoroughly equal to any further encounter. The result of the undertaking had a favorable influence on the spirit of the entire fleet; however, the fleet command did not omit, in view of the widespread

publicity of the events, to point to the fact that exaggeration should be avoided and presumption guarded against.

Although the advance into the Hoofden had given a comparatively exact picture of the Channel patrol, so that it appeared that a repetition with stronger forces would be correspondingly successful, the next undertaking, which was begun on 18 August, the day of the return of the cruisers from the Hoofden, did not take place in that direction, but was aimed at the British shipping off the Dogger Bank, where it was hoped to find a great number of English fishing vessels cooperating chiefly in fleets of 30 to 50 vessels and also, perhaps, forces engaged in protecting them. Apart from the Channel patrol and the directly engaged protective forces of the enemy's river mouths and bases the latter were at this time the only attainable object of attack.

On a day yet to be fixed, the choice of which was dependent on the weather and information received, two small cruisers and a torpedo-boat flotilla were to begin searching at dawn from the southwest corner of Dogger Bank in a northerly direction for English fishing vessels, take on board crews of vessels established to be indisputably English, take possession of the papers, and bring them along as evidence, but to destroy the vessels themselves. Even if it was believed that English vessels were perhaps fishing under a neutral flag and had also changed their paint and distinguishing marks, then everything was to be done by a thorough examination of the papers so that the neutrality of those not belonging to enemy countries would be respected. For this purpose there was attached to each of the cruisers and torpedo boats a German, rated in the merchant marine as a fishing steamer captain, who was acquainted with the circumstances of fishing on the Dogger Bank and was capable of recognizing without difficulty by their shape and distinguishing marks the English fishing vessels.

The second in command of the torpedo boats, Commodore Hartog, was intrusted with the undertaking by the commander of the scouting vessels and for its execution was allowed, besides his flagship *Rostock*, commanded by Commander Thilo von Frotha, the small cruiser *Strassburg*, commanded by Commander Ritzmann, which had taken part in the previous undertaking, and also the Sixth Torpedo-Boat Flotilla under the flotilla chief, Lieut. Commander Max Schultz.

Commodore Hartog ordered that the advance of both cruisers (see chart 14 and the detailed order, Appendix 6), each with a half flotilla, should be as far as the southern corner of the southwest flat of Dogger Bank so that when the *Strassburg* arrived there she would still be about 70 miles from the English coast and the *Rostock* 80 miles distant. At 3.30 a. m. the advance of the torpedo boats across Dogger Bank was to begin from that point on a northeasterly course, the

vessels proceeding along radial lines. The cruisers were to follow, closing in at a distance of 5 miles apart, so that a rapid combining of fighting power would be insured in case enemy forces were sighted. The placing of the torpedo boats ahead of the cruisers was to afford a certain protection against enemy U-boats, while on the advance at night these boats, grouped in half flotillas, were to be behind the cruisers so that confusion with enemy vessels would be avoided and a better cohesion of the forces made possible.

For the preparation of the undertaking more practical measures were planned by those in charge than for the advance in the Hoofden. This time it was to be prepared for by an extensive exploration by the *Cöln*, *Stuttgart*, and *Danzig*, as well as the Second and Fifth Torpedo-Boat Flotillas, which was to extend in the region west-northwest to north of Helgoland for a distance of 120 miles, while five boats of the Third Torpedo-Boat Flotilla simultaneously were searching the region from northwest to west by north of Borkum for a distance of 80 miles for enemy U-boats. Actually only the latter advance from the Ems was carried out, while the cruiser advance, conducted by the officer in command of the torpedo boats, Rear Admiral Maass, was stopped at 6 p. m. on 20 August and, indeed, for reasons which according to the views then held, were very characteristic; namely, that west of Helgoland enemy U-boats had been reported by torpedo boats of the outpost line. About midnight the other cruisers were ordered to remain in the river mouths until further notice. On the other hand, the Second and Fifth Torpedo-Boat Flotillas received orders to form in a line from 100B to 107E; that is, from approximately the longitude of Borkum, 40 miles west of Helgoland, an outpost line 30 miles long for combating enemy U-boats and as a defense against the destroyers that perhaps followed them. Accordingly, at dawn on 21 August two more torpedo-boat flotillas and two aircraft for fighting enemy U-boats were sent out, but no more of the enemy was sighted, so finally the evening of 21 August was set for the beginning of the Dogger Bank undertaking. As a protection for this undertaking the occupation of a survey position by a small cruiser at 033E, supplementary No. 7, a point about 90 miles west of Helgoland, was considered sufficient. The S. M. S. *Mainz* was to take up this position at dawn on 22 August, while at the same time the two battle cruisers *Seydlitz*, *Moltke*, and the armored cruiser *Blücher* (*Von der Tann* lay in dry dock) were held in readiness to sail in Schillig Roadstead. It is very significant in this connection that a radiogram from the commander of the scouting forces to the First U-Flotilla, in contrast to the previous policy, expressly stated the intention that the battle cruisers and the *Blücher* were to occupy a survey position at about 54° 40′ north and 15′ east; that is, about 100 miles west-northwest of Helgoland and 60 miles distant from the cruisers on Dog-

ger Bank, at dawn on 22 August. This measure was later dropped at the instigation of the fleet command without reasons being given for it; however, one is justified in assuming from what had gone before that overestimation of the U-boat danger also led here to giving up the protection of the small cruisers by dreadnaughts. In spite of this abandonment this undertaking, too, was spared a reverse to which may be ascribed the entirely passive attitude of the opponent. A bitter lesson was first to be learned from the heavy losses sustained by the small cruisers on 28 August.

In the foregoing case a certain amount of protection for the far-advanced small cruisers was afforded by the measure that three U-boats lay waiting southeast of the Dogger Bank.

The order for this was received rather late by the commander in chief of the First U-Flotilla, on the forenoon of 21 August, so that only by immediate sailing of those boats that were ready, *U-5*, commanded by Lieut. Lemmer; *U-16*, Lieut. Klaus Hansen; and *U-17*, Junior Lieut. Feldkirchner, was the execution really made possible. To reach the positions not later than 5 a. m., the boats had to run on their petrol engines, a circumstance that meant such an extensive limitation of their readiness to submerge that the boats in this condition could no longer escape an opponent at night by submerging. For this reason the S. M. S. *Hamburg* went along ahead, so that finally, even after the line had been formed, it would afford protection to the boats by day at a suitable and nonbetraying distance and draw superior enemy forces onto the U-boats. In this way it happened that the chief of the First U-Flotilla with S. M. S. *Hamburg* and the allotted U-boats almost at the same time with the other cruisers and torpedo boats, but without tactical connection with these began the advance from Helgoland toward 2 p. m. For performing this duty the chief of the First U-Flotilla issued the operation order given in appendix No. 7. Accordingly the U-boats had taken up their waiting positions in a region about 120 miles back from the outermost point reached by the cruisers on Dogger Bank. The U-boats lay with reference to each other at the corners of an equilateral triangle with a side length of 20 miles, so that mutual hindrance in the case of attack was not to be expected and a limitation of the field of activity of the individual boats was not necessary. The U-boats were successfully brought into position at the same time and without unusual occurrences.

In the advance of the cruisers and torpedo boats with very clear weather, smooth sea, and a light northwest wind, the first incident occurred at 5.45 p. m. In 056E, about 75 miles distant from Helgoland, an enemy U-boat attacked the S. M. S. *Rostock*. The U-boat was observed (by the commander) when firing at a distance of 600 meters by the typical track of the submerged torpedo. Only by

immediately turning away the ship by putting the helm hard over could the two torpedoes fired at the ship be avoided. They passed, however, so close to the bow that the air bubbles of the wake of the torpedo crossed the course of the ship just ahead of the bridge. As during the attack for a short time the periscope and the upper edge of the conning tower of the U-boat were visible our guns opened fire, but, because of the rapid submersion of the boat, without success. In spite of the good, clear weather and the smooth sea the advancing torpedo boats noticed nothing suspicious. The U-boat had probably for a long time previous lain exactly on the course of the cruisers and held to one place so that no wake from the periscope would result which would betray the vessel. After the attack the torpedo-boat groups were separated as a protection against U-boats and the trip continued by zigzag courses. One torpedo boat, *V-157*, was left at the place where the U-boat was sighted to cruise about and prevent the U-boat from coming to the surface and sending radio signals, and finally to take it by surprise when at dark it came to the surface. At 12 o'clock at night the torpedo boat was to return to Helgoland. If the possibility is visualized that the *V-157*, too, was exposed to further U-boat attacks at any time and might be seriously damaged by them, then it was doubtless not unobjectionable to leave behind only one boat at this place quite on its own resources. Accordingly later, as a rule, only pairs of torpedo boats were used for similar purposes so that the boats could aid each other in the event of mine and U-boat danger. But also in view of the always possible appearance of surface forces the leaving behind and dispatch of a single boat from this place to Helgoland meant a not inconsiderable imperiling of the detached vessel. When darkness fell the other boats closed up in half-flotillas to the cruisers. Between 9 and 10 o'clock in the evening two Norwegian sailing vessels were found and examined, but were unable to give any information concerning enemy warships. Not until 1 a. m. was the first English fishing steamer sighted by the *V-160* and, after the crew had been taken on board, sunk. It was the fishing steamer *Julian* from Boston. When at dawn searching Dogger Bank on a northeast course was begun neither enemy vessels nor the *Strassburg* group were in sight, although, according to plan, the distance apart of the cruisers was to be only 12 miles. Still the horizon was hazy. In further searching of Dogger Bank, contrary to all expectation, not a single vessel was found by the *Rostock* group, and by the *Strassburg* group only one vessel, the steamer *Pollux G-Y 84*, from Grimsby, which after taking on its crew of nine men was sunk by the *V-154* in 097B, supplementary No. 5. Also a 2½ hours' trip in a northeastern direction was unsuccessful. The search was discontinued and on the radio order of the commander of the torpedo boats the return was begun.

In spite of repeated exchange of radio reports in regard to position, the juncture of the *Strassburg* group with the flagship could not be carried out because of unusual differences in reckoning which had resulted from the impossibility of an observation for 18 hours. As was later established on sighting land, the *Rostock* had been about 10 miles west of the estimated position of the ship. Consequently the position reports gave no sure data concerning the relative position of the cruisers, a circumstance which in the event of sighting enemy forces made cooperation essentially difficult, if it did not prevent it.

Independently of the trip of the *Strassburg* and *Rostock*, the S. M. S. *Hamburg*, commanded by Lieut. Commander Von Gaudecker, succeeded in destroying three English fishing steamers which had been sighted near our own U-boats. They were the fishing steamers *Shirbeck*, *Wigtoft*, and *Walerus*, which, after their crews had been taken off, were sunk one after the other.

On the return trip the torpedo boat *V–158*, commanded by Lieut. Recke, accompanying the *Rostock*, sunk two more fishing steamers at about 100 miles from Helgoland and 60 miles north of Terschelling in 005B, one of which at first tried to escape. They were the steamers *Florian* and *India* from Boston. A passing Norwegian mackerel fishing vessel stated that in spite of a stay of 14 days in this region, so far no English warships had been seen. Another fishing steamer, the *G–Y 750*, from Grimsby, was sunk at 8.25 a. m. by the *V–152* near the *Strassburg*. All in all, only nine fishing vessels were victims of this expedition, a number which was considerably below expectations.

While the majority of the steamers were encountered alone, the fishing vessels destroyed by the *V–158* seemed to be cooperating. Also their position, about 100 miles from Helgoland, permitted the conclusion that they were employed for military purposes, and it was not inadmissible that they had to serve in this locality for the observation of our ship movements as well as a base for outlying enemy U-boats. This assumption was confirmed by observations which were made by one of our outlying U-boats, the *U–5*, at its waiting position. Without anything further, the plan may be deduced from this that even in advances which did not, as in the previous instance, have as their chief task the damaging of the enemy fishing industry, of thoroughly examining all fishing vessels coming in sight, and in doubtful cases taking charge of them, even if thereby the advance had to be stopped. For the rest it was obvious that as far as possible the captured steamers should not be sunk, but brought in so that they could be employed for our purposes.

Of the fishing steamers sunk about 90 men were taken on board and landed as prisoners at Wilhelmshaven. According to the statements of these people the insurance company at Aberdeen had refused insurance for all fishing steamers, but that fishing nevertheless was very remunerative on account of the high cost of foodstuffs in England. In the English press the standpoint had been taken that Germany had declared war on England, and therefore the German Fleet must come to England to fight, and not vice versa.

By way of neutral vessels during the undertaking a number of Norwegian and Swedish ships were examined, which in part had been at sea a long time. Their crews unanimously stated that so far they had not sighted any English warships.

On 22 August the cruisers and torpedo boats entered the home ports; last of all, on 22 August, returned the U-boats, having seen nothing of the enemy.

The undertaking had, however, for the first time given cruisers and torpedo boats opportunity to test the carefully and thoroughly trained cooperation of peace time under war conditions. It was satisfactory in this respect. Military success corresponding to the exertions was again refused, however, to the forces engaged because of the lack of corresponding objects of attack.

On the very day of the return of the cruisers from the Dogger Bank expedition the *Nautilus* and *Albatross*, the two mine ships of the fleet, received orders to prepare for a mine undertaking against the English coast. Various reasons made it seem desirable to postpone until then the undertakings expressly ordered for the North Sea in the operation order. On 11 August a mine undertaking, already begun, was again abandoned. Furthermore, there was the danger which the use of mines on the enemy coast meant for our own U-boats so long as it was intended to use them in the same region. It seemed, therefore, more correct to first commence mine operations against the enemy coast after the U-boats had fulfilled their mission unless it was desired to use the mines at such places on the enemy coast as lay outside the range of activity of our own U-boats. Therefore, we naturally abandoned laying mines at the approaches of enemy ports. When, accordingly, on 14 August, a larger number of U-boats was ready for use on long-distance operations it was desired to await the reports from these boats concerning the nature and management of the enemy coast patrol. By reconnoitering the most frequently navigated warship routes it was hoped to make the mine undertakings from the start correspondingly successful, especially as the experiences of the *Königin Luise* demonstrated the danger to which the ships engaged must be expected. The success ought if possible correspond to the risk. For the same reason it seemed necessary to wait for still darker nights. In the

still bright nights just before and after 14 August it was to be feared that the mine ships would be unable to approach the English coast unseen and might perhaps be destroyed. Not until this time did it appear that the favorable moment for their use had come.

For its execution the fleet command ordered that an advance should be made against the Humber and the Tyne with each groups consisting of a mine ship and a torpedo boat half-flotilla to lay mines off the entrance to the river mouth or off their approaches and as opposed to the policy of the *Königin Luise* undertaking to lay them during the greatest darkness and not during daylight. In other respects the commanding officers of the mine ships were given complete freedom of action, but they were to endeavor in every case to lay the mines as close as possible and unobserved to the river mouths.

To the convoy cruiser and the half-flotilla fell the task of drawing enemy patrol forces away from the mine layers and also to lie off at a distance when the mines were being laid. The cruiser of the Tyne group was to do this if necessary by a short bombardment of the forts of South Shields at long range in case the mines were to be laid south of the mouth of the Tyne. If fishing steamers were sighted during daylight then they were to be destroyed, first taking off the crews. Special emphasis was laid on this point, for, aside from damaging the opponent, the assumption had been confirmed that a systematic patrol of the North Sea was being maintained by English fishing steamers. Such vessels must be prevented from reporting by radio the advance of our forces to British units at sea or to the coast patrol.

For the desired surprise effect the forces concerned on this undertaking were not screened even though such a formation might offer the prospect of drawing away chance pursuers of our forces, which were to advance as far as the enemy coast, and to destroy them before the enemy could appear in force. By a nonsimultaneous departure of the covering forces on misleading courses the dreaded peril of surprise attack could be avoided as longer war experience showed. Such a covering position at sea would also have lent moral support to the undertaking and for the units have made possible the collection of valuable war experiences.

For the advance against the Tyne the commander of the scouting forces assigned the S. M. S. *Stuttgart*, commanded by Commander Friedrich Richter; S. M. S. *Albatross*, commanded by Lieut. Commander West; and the Second Torpedo Boat Half-Flotilla, half-flotilla chief, Lieut. Wilhelm Rümann, commanding, just returned from Dogger Bank, while the Humber duty was assigned to the S. M. S. *Mainz*, Commander Wilhelm Paschen, commanding; S. M. S. *Nautilus*, Commander Wilhelm Schultz, commanding; and the Third

Torpedo Boat Half-Flotilla, half-flotilla chief, Lieut. Boest, commanding.

After a commanders' conference on the *Stuttgart*, in which the carrying out of the duty was thoroughly discussed, the forces of the Tyne group began the advance from Helgoland on 22 August at 9 p. m. In order to conserve the fuel supply of the torpedo boats, the speed was to be only 12 knots. (Cf. also order of S. M. S. *Stuttgart* in appendix No. 8.)

By day the *Stuttgart* with the torpedo boats formed a scouting line ahead of the *Albatross;* at night the ships proceeded in double column, three boats closing up to the *Stuttgart* and two to the *Albatross*. Up to August 24, at 8 a. m., the group had covered almost half the distance of the advance without incident when a radio from the flagship of the commander of the scouting forces gave the information that the undertaking had been postponed until the night of the 25th. The reason for this was that the *Mainz,* shortly before leaving for the Humber, had gone aground in the Ems and although she later got off, the simultaneous execution of both undertakings for the coming night was not certain. Great value must be attached to simultaneousness as otherwise the group later advancing against the English coast would be in considerable danger through the alarm given to the opponent by the first undertaking. The greater effort of the *Stuttgart* group by the double advance which should be regarded as quite considerable in view of the constant lookout maintained on the ships for U-boats, torpedo boats, and mine dangers. At 6 p. m. the ships again anchored off Helgoland; the torpedo boats ran into the harbor for coal, but exactly at 9 p. m. the group was again on the advance. (See chart 15.)

Many fishing vessels were sighted on Dogger Bank on the morning of 25 August, but only under the Norwegian flag. About 10 a. m. a torpedo boat of the scouting line reported gunfire. However, this report was later ascertained to be the result of an approaching thunderstorm from the west. In the afternoon the *V–152*, Lieut. Karstens commanding, was obliged to return to Wilhelmshaven because of leaky condensers. It was a serious decision to send back a single boat from here to the base, but the sending of a couple of torpedo boats would have weakened the division too much. Soon afterwards the first enemy fishing steamers were met. The *V–153*, Junior Lieut. Baustadt commanding, herewith sunk the steamer *Rhine*, and the *V–155*, commander by Junior Lieut. Carl, sunk the steamer *Harrier*. Unfortunately, because of lack of time, they had to abandon sinking three more fishing steamers that were in sight.

At 4 p. m., the steamer *Lobelia*, and at 7 p. m., the steamer *Valiant*, both fell victim to the *V–155*. In addition, toward evening the fishing steamer *Mersey* was sunk by the *V–154*, Junior Lieut. Wippern commanding. All steamers were from Grimsby. From the six fish-

ing steamers sunk 63 men of the crews were taken prisoners. Some of these stated that they found no English warships in the Tyne, a statement that found but little credence, especially as off the Humber destroyers had been sighted according to a report of a Norwegian steamer.

During evening twilight, at about 8.40 p. m., the position 1 (see chart 15 and orders of *Stuttgart*, appendix No. 8) about 60 miles distance from the coast was reached. The boats closed up to the ships; *V–151*, commanded by Junior Lieut. Von Hollenffer, and *V–154* followed in the wake of the *Stuttgart*, *V–153*, and *V–155* in the wake of the *Albatross*.

It was decided that the *Stuttgart*, in case of contact with the enemy, should take position off point 2 and endeavor to draw the enemy toward it, thus diverting him from the *Albatross*. In that event it was assumed that stronger enemy forces would be summoned by radio, thus preventing the *Albatross* from laying her mines as intended. If the latter was compelled to lay them other than was planned, then a definite course must be agreed upon that the *Stuttgart* might steer clear of the mines. Therefore the *Stuttgart*, on meeting the enemy, strove to carry the fight in the direction of 0568, supplementary No. 5. In order to avoid surprises, the trip, from point 1 on, was so directed that point 2 was reached about 11.40 p. m., English time, as at that time the change of sentries on the English vessels took place and consequently a diminished attentiveness of their crews could be depended on. Shortly after darkness it became very hazy and when at 11.40 p. m. position 2 was reached, as was intended, the ships found themselves under a clear, starry sky in a thick, low fog. In spite of the difficulty caused by the fog it was doubtless of assistance in keeping secret from the enemy the mine laying. According to plan the two groups separated at position 2 about 8 miles from the coast in order not to attract the attention of enemy patrol forces unnecessarily to the *Albatross*.

Because of the presence of the cruiser, however, the course and speed of the vessels were so chosen that the *Stuttgart* during the preparation was not over 3 miles from the *Albatross*, in readiness to attack enemy forces during the laying of the barrage but under all circumstances sufficient distance from it. For the direct protection of the mine-laying operation the two convoying torpedo boats maintained position on a quarter-bearing and acted as a protection on the land side, in readiness for attack on any enemy forces that might suddenly be sighted. The *Stuttgart* from position 2 steered for an hour a south three-quarters east course at a speed of 10 knots and then changed course to east. The *Albatross* steered a course south-southwest three-quarters west at 14 knots speed, still closer to the coast, and shortly after 1 a. m., on 26 August, commenced

laying mines, changing the course every 10 minutes from south-southeast to south-southwest. (See chart 16.) Shortly before and after mine laying the convoy vessels believed they made out a patrol vessel emerging at times from the fog, the outlines of which could not be exactly made out. Both boats unanimously considered it to be a torpedo boat or a destroyer. Otherwise, in spite of the immediate proximity of the coast, nothing of the enemy was observed. It was to be assumed that the obstruction would fulfill its purpose.

The lights on land were made out with difficulty. The lights along the coast were either put out or were invisible because of the prevailing fog. To obtain the position of the obstruction the estimated position of the *Stuttgart* as leading ship had to be taken as a basis. The depth position of the mines was so estimated that for an average spring low tide they would be 2 m. under surface.

Toward 1.30 a. m. it cleared up, and by 1.52 a. m. 200 mines had been laid and the undertaking had been carried out as planned. The center of the obstruction lay about 5 miles from the Tyne mouth. For an extent of about 11 miles it guaranteed both by its shape and position that English warships coming from south, east, or north must inevitably run onto the mines.

After the last mine had been laid, an eastern course was steered at maximum speed for the previously agreed rendezvous in 0568, supplementary No. 5, about 40 miles east-northeast of Tyne, in order to effect a meeting with the *Stuttgart*. This did not succeed, however, as the fog had meanwhile become so thick that both groups were compelled to make the return trip alone and were only cognizant of their relative positions by radio.

About 5 a. m. on 26 August the *V-154* succeeded in sinking the fishing steamer *Sati* from Grimsby. At about 7 a. m. it cleared up. At about 8 a. m. the first obstruction report was sent by radio to the commander in chief of the fleet. This report had been delayed in order not to betray the presence of German forces off the English coast. The greatest restriction in use of the wireless was one of the prime conditions for success. Accordingly an agreement was made beforehand that within a distance of 100 miles from the English coast radio was to be used only on meeting the enemy, and even calls from their own bases were not to be answered within this area. Unfortunately this agreement was violated in various ways by the torpedo boats and in particular by radiomessages concerning the sinking of individual fishing vessels, the earlier or later knowledge of which could have made no difference to the commander. On the contrary, the ships up to 8 a. m., in spite of the fog, only once exchanged a short and important radio message concerning position, course, and speed.

Without further events the *Stuttgart* and *Albatross* reached Helgoland about 8 p. m., after the torpedo boats had been previously dispatched by them to their bases within the German patrol line. The written obstruction report to the fleet will be found in Appendix No. 9. The exact location of the obstruction will be evident from Chart 16.

In selecting the place to be obstructed due consideration was given to the fact that in-going and outgoing British forces would be damaged all the more rapidly and seriously the closer the mines were planted to the mouth of the Tyne, and that the distance from the coast should not be too close if the mine laying was to be concealed from the enemy.

A meeting with the supposed inner patrol line doubtless off the mouth of the Tyne was in any case to be avoided. The commanding officer of the S. M. S. *Albatross* actually succeeded in overcoming all these difficulties. The mines were planted exactly as planned; the undertaking was favored by the weather and the insufficient organization of the British coast defense, and returned to its base unmolested. The difficult task was therefore accomplished in a satisfactory manner. The obstruction had especially favorable prospects in that it could be assumed that the Tyne must be frequently used as a base by coal, oil, and munition steamers as well as by detachments of the British Fleet.

Almost simultaneously with the obstruction off the Tyne mines were planted off the Humber. In the location of this obstruction it was considered as fundamental that above all the opponent was to be injured by blocking the main ship channel from Outer Dowsing to Hamborough Head, and accordingly mines were planted in the squares 021, 024, 020, and 025E, supplementary No. 5, in two partial obstructions 5 miles in length, the mines being laid 90 m. apart. The following was also decided for special cases:

1. If the obstruction must be prematurely laid, that is, before 10 o'clock in the evening, it will be laid north to south in order at least to bar the Humber–Helgoland route.

2. If between 10 and 12 o'clock an encounter takes place the obstruction must be laid on a course east to northeast (that is, approximately an opposite course).

3. Radio signal communication only with harbor wave and slight intensity.

4. Recognition signals only with flash lantern, only in urgent cases with night-signaling apparatus and new recognition signal.

The advance, which, in view of the shorter distance to the Humber was not commenced until August 25, at 6 a. m., was carried out in the same order as in the case of the Tyne group. By day the cruiser and the destroyer explored for about 5 miles ahead of the *Nautilus;*

when it grew dark the torpedo boats joined the *Mainz*, followed by the mine layer in the wake of the cruiser.

When the group, at 9 p. m., was still about 60 miles from the English coast, several white lights were sighted southwest of Dogger Bank and then an English fishing steamer, which was sunk. The further approach to the coast was again favored by the hazy weather, so that about midnight the first obstruction of 100 mines was laid. At about 12.30 a. m. the second obstruction followed, with no interruptions by enemy forces. Only the lights of several steamers were sighted during the mine laying. Departing from the method of the Tyne group, the *Nautilus* remained in the wake of the *Mainz*, which because of greater simplicity permitted the direct support of the mine layer by the cruiser and accordingly was later more often employed than the former.

The exact location of the obstruction is evident from chart 17; the written obstruction report is given in appendix No. 10.

At 12.50 a. m., on August 26, the group was headed on its return trip, and between 2 and 4 a. m. it succeeded in sinking six more fishing steamers.

This problem also was carried out as planned, in a seamanlike manner, and uninterrupted by the enemy. Off the Humber there was now a section of the sea frequently used by English forces in sailing north for the Thames, and vice versa, strewn with mines.

That our forces returned without loss from these two hazardous undertakings was a source of the greatest satisfaction to the entire fleet. If the enemy had given up a closer patrol of the German North Sea coast then it could be assumed that he would insure his own coasts and the important trade routes sufficiently by patrol forces. Giving up this meant either an underestimation of the German opponent in so far that the British Admiralty did not even reckon on extensive undertakings of the German naval forces or that did not wish to expose its forces to our attack. It remained to be seen whether the British Admiralty, as a result of the losses expected from the German mines, would change its strategy and expose British forces to our attack or whether for this end still stronger demonstrations against the enemy coast would be necessary.

The previous offensive operations were undertaken by light forces exclusively, while the battleship squadrons and battle cruisers remained behind. This was primarily due to the fact that the forces utilized were intended to act with as much surprise as possible. It was believed that this would be lessened without the presence of the main fleet, although this danger could have been avoided by nonsimultaneous departure, and at night, of the covering forces on misleading courses and out of sight of neutral coasts, as was learned from longer war experience. The withholding of the large ships also corresponded

to the spirit of the operation order then published by the fleet command, which, moreover, was shared by the squadron chief and was in no way opposed by the Admiralty staff.

The correct strategy, so considered for years, for our conduct of naval war was by petty warfare to first procure a numerical equalization of forces before undertaking the decisive battle. This led to an endeavor by the fleet command to save all ships of greater fighting value for this purpose and if possible to avoid all preliminary danger to them. The effort displayed to concentrate all fighting power for this decision must be recognized as correct. The oft-repeated error during the early part of the War lay in the fact that dreadnaughts were not employed necessary for the covering of light surface forces during an offensive, and this in contrast to the method followed during the strategical autumn maneuver of the year 1913. This error was fatal, however, as the withholding of the dreadnaughts allowed the only opportunity to pass that might under favorable circumstances have led to a decision worthy of the endeavor. Petty warfare alone was not sufficient to force the opponent to abandon the strategic defensive and to seek battle in the German Bight, as desired by the Germans. This thought was due, as the experience of the War later showed, to a wrong conception of the strategical and tactical development of a meeting with the enemy, another aspect, however, which made itself fully felt during the year 1914 and thus strengthened the hitherto-named reasons for retention of the dreadnaughts and that was the considerable value of the prospects of attack by enemy U-boats and the consequences feared therefrom. On what facts this estimation was based, how far it was justified or exaggerated, must, in view of the significance of this question, be discussed before this chapter is concluded.

In a statement already made which describes the conduct of the High Sea Fleet during the first year of the War and which was completed in January, 1918, the commander in chief of the fleet, Admiral von Ingenohl, speaks as follows:

"The last maneuver of the May voyage—which was, moreover, the last major maneuver before the War, the compilation of which was ready just before the outbreak of War—afforded opportunity for the first time of employing our U-boats on the offensive; that is, on the side supposed to be hostile to Germany. The experiences of this maneuver acted upon all leaders and commanding officers almost as a revelation, as it followed that the inner Helgoland Bay was adapted in a really ideal manner for the undertakings of enemy U-boats because of the favorable depths, good quality of the sea bottom, and easy orientation from the island of Helgoland. The U-boats of the enemy side in the course of the first days' maneuvers bombarded almost every ship that showed itself outside, and besides caused heavy losses

to the main fleet on our side, both when at anchor in the Jade or outside the bar as well as in the twilight following the going to sea and even at night at sea north of Helgoland, and indeed, under circumstances that approached as close as possible to the conditions of war. The impression was especially strong that in view of the enemy U-boats lying in wait off the river mouths the development of the main fleet representing our fleet in going out would be considerably endangered. As our U-boat commanders decided, a strong U-boat protection by torpedo boats would be at most a difficulty, in no case a complete prevention for the success of enemy U-boats.

"During the first months of the War the fleet was strongly under the impression of this maneuver experience."

The official report of the year 1914 concerning the above-mentioned maneuvers on the contrary holds the U-boats in lower estimation:

"It is to be admitted that in peace time in navigated waters the merchant steamers, sailing vessels, fishing boats, etc., in the maneuver zone compel the U-boats to frequently use their periscopes. In war time this is not to be expected. Also U-boat commanders are more certain to use their periscopes less in attacks in war time than in attacks in peace time where to avoid mishaps the greatest caution is necessary throughout. The chances of the U-boats to come up unnoticed are further diminished in peace-time maneuvers by the fact that the ships in planning the maneuver know that U-boats must be in close proximity.

"On the other hand, it is not to be misunderstood that for U-boats the task is essentially lightened in peace time by the required speed and course limitations of vessels and by the increased distances of safety in cruising and of the screening line. In war time, running unseen at high speed and steering a zigzag course, passing protective forces that are close to each other and coming into a favorable position for attacking the main fleet, which is proceeding at high speed and will frequently change course, will be extremely difficult for the U-boats, especially because they can not be schooled in this in peace time.

"The further military development of the U-boat as a weapon can only be advanced if the inherently very good peace-time performances of our U-boats are not too highly valued with reference to the demands of war."

As long as War experiences were still lacking, a less high valuation of the U-boat danger could have been adopted than that of the fleet command, especially as the actual behavior of enemy U-boats in the first period did not seem to justify the all too high estimation of them. Although English U-boats, as it turned out, from the first day of the War were kept continually in the German Bight up to the end of August, they could not claim a single success in spite

of some attacks on our small cruisers and torpedo boats whose stay on fixed patrol positions considerably favored the prospects of such attacks.

The new U-boat weapon must first gather War experiences before success could be thought of.

In spite of all, the overestimation of the U-boat damage for warships was widespread in this early period and was experienced by friend and foe alike. As will be later brought out, even the heavy English forces were at this time strongly influenced in their movements by the U-boat fear. On the German side this is recognizable from many war diaries. Viewed psychologically it led to a general unrest and frequently was established to be an error on the part of the observer similar to the alarming false reports of the sighting of aviators and aircraft during the first period of the war. Still more frequently, indeed, was it doubtful whether U-boats had been present. The unrest was, however, essentially increased by the circumstance that means of defense against the new weapon were not ready; depth bombs and mines, especially effective against U-boats, as well as nets and U-boat detecting apparatuses, were only ready for use at a later period. This explains why at the beginning, in view of the general nervousness about U-boats, merely the report of an enemy U-boat was sufficient to keep off the high sea not only dreadnaughts but also small cruisers.

The first U-boat was reported by a torpedo boat of the harbor flotilla of Helgoland to the small cruiser *Stettin*, which was patrolling off the north harbors of Helgoland just a few hours after War had broken out with England. If this report is correct, then the confirmation of it is not uninteresting that the English U-boat must have left its home port with corresponding orders almost 24 hours before the outbreak of war. Whether in fact one or more English U-boats were at this time in the immediate vicinity of Helgoland is difficult to decide from the German side. In substantiation of it is a statement of the Minister of Marine, Mr. Balfour, on the occasion of a parliamentary speech in the summer of 1916 in which he mentioned that U-boats had observed Helgoland Bay immediately after the outbreak of war.

The first report had at all events the consequence that the small cruisers were withdrawn into the river mouths and the torpedo-boat protection was strengthened, while at the same time the commander of the scouting forces received orders to have the German Bight searched by mine-sweeping divisions with mine-sweeping apparatus.

This exploration of Helgoland Bay was always unsuccessful, but, on the other hand, U-boats were frequently ascertained outside of Helgoland at a greater distance from the island. For instance,

on 5 August a fishing cutter had sighted a U-boat in 018B, about 100 miles west-northwest of Helgoland, and another one on Dogger Bank, while on 6 August one of our U-boats, the *U–5*, reported "apparently enemy U-boats" in 085B, 50 miles west-northwest of Helgoland.

The chief of the First U-Flotilla accompanied this report with the following observation in the War Diary: "There is a great inclination to still regard the report as erroneous. In view of the fact that in the German Bight so far no U-boat attack has yet been attempted and also that not a thing was found by the vessels engaged in searching, there are grave doubts as to the correctness of all these reports concerning enemy U-boats." At the same time the fleet command arrived at the conclusion that enemy U-boats did not appear to be in Helgoland Bay, but, on the contrary, they must be expected about 100 miles northwest of Helgoland.

Naturally obviously false alarm reports concerning sighting enemy U-boats directly off the river mouths were not lacking, mostly from smaller nonofficered vessels, outpost steamers, and pilot steamers. However, even the larger vessels were not free from deception. For instance, among others, it was once reported by the small cruiser *Stralsund* that in 158E, that is directly off the Elbe, it had two torpedoes fired at it from a western direction, the course of which could be distinctly seen in spite of the dark night. Such reports cause much unrest in the guard service and led to considerable overexertion of personnel and material of the torpedo boat. With certainty, on the other hand, U-boats were often sighted west and northwest of Helgoland and off the Ems. For instance, the *L–3* on 9 August sighted a U-boat in 119E, 30 miles west-northwest of Helgoland; on 17 August the *S–65* unsuccessfully chased an enemy U-boat in 063E off the Ems. On 20 August, U-boats were reported in 128E and 132E by German torpedo boats. On 23 August a U-boat was again sighted off the Oster Ems, and thereupon the square was searched by the entire Second Torpedo-Boat Flotilla. On 21 August the presence of a U-boat was proved beyond doubt in 056E, about 20 miles west-northwest of Borkum Reef Lightship, by an attack on the *Rostock*, and on 24 August in 143E, just north-northwest of Helgoland, by an attack on the *G–111*.

On the other hand, there is not at hand a single observation of the first half of August that confirms the assumption that at that time English U-boats had passed through our protective lines into Helgoland Bay. Also, on the enemy's side, a certain amount of time must have been consumed in grasping the nature and value of the U-boat in war time and learning the nature of our defensive measures. Of course the danger must grow with time, especially as sufficient

measures of defense were not at hand and as trials were not made in that direction because of the newness of the weapon.

To sum up, and with reference to the experiences obtained later in the War, it can not, however, be disputed that the U-boat danger was to a certain extent overestimated during the first part of the War by the fleet, especially if it is considered that the just-mentioned cases of the occurrence of enemy U-boats include all that were reported up to 25 August. It may be mentioned in passing that the fleet command were still further strengthened in their conception by the loss of the small cruiser *Hela* on 13 September, 1914. In this connection the then commander in chief of the fleet stated in the above-mentioned memoir as follows:

"After the *Hela* had been torpedoed by an enemy U-boat in the same place where days before the fleet had maneuvered, I had to make it a rule, so that the desired equalization of forces would not turn out to be the contrary, to expose no ship and especially no division to the U-boat danger unless it was required for a definite purpose, hence neither for drills nor for mere demonstrative advances. Just because I certainly counted on a coming decisive battle I was compelled to permit no ship valuable for this purpose to fall victim, without urgent necessity, to the enemy U-boats and, later, to mines as well. This withholding of the main body of the fleet in the river mouths was unpleasantly felt by the crews of all the vessels engaged, above all by me myself, and could only be endured out of respect for the importance, frequently stated, even by the highest authority, of this measure, and they ardently awaited time when the fleet was to be engaged in battle."

CHAPTER V.

August 28, 1914.

The German offensive measures described in the preceding chapter were offset by *none* on the part of the English. In regard to the intentions of the enemy no more was known than heretofore. Although it seemed to those conducting the war for Germany that the time for the full employment of the High Seas Fleet had not yet come, still the thought of the coming decisive battle occupied all minds. In the development of ship types, peace-time tactics had placed this goal ahead of all other considerations, so now all endeavors were centered toward the preparation of the fleet and the protection of its communications for the decisive battle. Bound by the operation order, impelled by the U-boat danger, and in the belief that the initiative for the battle would sooner or later come from the numerically greatly superior enemy, our own task was viewed too narrowly. It was regarded, besides, as an offensive activity on the part of the light forces, also as keeping Helgoland Bay and the river

mouths clear from U-boats and English mines for later undertakings and as a zone of deployment for the fleet. In the fear on the final day of the fleet blockaded in the river mouths, through lack of suitable patrol vessels the torpedo boats and small cruisers were formed into a patrol service with the result that too few forces were available for action in the event of sudden attacks by the opponent or also for our own extensive scouting and torpedo-boat undertakings in the vicinity of the free North Sea. The fact was overlooked that an offensive would have been the best defense and that an activity of the entire fleet carried far into the North Sea would have been the best means of protecting the German Bight and the river mouths against undertakings of the opponent. A pronounced disproportion between the considerable activity of the light forces and the expectant inactivity of the heavy formed the secondary phenomenon of this method.

The protection of the German Bight at the beginning of the War has already been thoroughly described in the first chapter. During August, in spite of the gradually recognized inactivity of the opponent, this method, with a few improvements, was still maintained. After the close of the period of strained relations and the beginning of the state of war on 5 August, the protection consisted of, in daytime, an inner and outer patrol line, each consisting of a torpedo-boat flotilla, stationed on arcs described with radii of 23 and 35 miles about the anchorage of the lightship *Elbe I.* Between both torpedo-boat lines was a similar one of U-boats with a radius of 29 miles. Behind the northern and southern flanks there were stationed a small cruiser and another one off the harbor of Helgoland. On the Weser was a convoy cruiser with a torpedo-boat flotilla in readiness for immediate advance; three flotillas remained in the river mouths. At nights the torpedo boats of the outer line as well as the U-boats were withdrawn to Helgoland so that there remained only the inner torpedo-boat line. At daybreak, because of the supposed U-boat danger, the small cruisers frequently withdrew into the river mouths.

The considerable demands on the personnel and on the light forces, which very soon made themselves felt in this kind of protective work, led, after urgent remonstrances of the chief of the First U-Flotilla, Lieut. Commander Hermann Bauer, to a change in this method, in the case of the U-boat on 6 August. The U-boat line was abandoned and the majority of the U-boats made available for use on the open sea or off the enemy's coast. The others were retained for the protection of the German Bight at Helgoland and were to leave the harbor there only if enemy forces were reported.

With conceivable envy our torpedo boats, trained for attack as in no other navy, saw the young sister weapon made ready for glorious duties. At the same time the withdrawal of the U-boats from the protective work imposed as a result a further burden on the

torpedo boats when the positions of the former in the day protection were replaced by an additional torpedo-boat line as otherwise the distance of 12 miles between the two previous torpedo-boat positions could permit enemy U-boats to come unobserved to the surface between the lines. Furthermore, in the inner German Bight the defense against enemy U-boats was composed alternately of another torpedo-boat flotilla or a mine-sweeping division, after the Third Mine Sweeping Division had been made ready for service at Cuxhaven.

With these arrangements, in view of the number of the torpedo-boat flotillas available, the limit of possibility was passed.

Even on 7 August, the inner torpedo-boat line had to be abandoned in order to designate a flotilla for exploring the German Bight as well as for purposes of attack. To make up for its removal the flotilla on the outer circle was given orders to discontinue steaming up and down in the direction of the patrol line but to cruise in the zone on changing courses, which were bounded by two concentric arcs of 25 and 29 miles radius. Even the constant readiness of a sortie flotilla on the Weser had to be given up as it was desired to save men, boilers, and engines of the torpedo boats, so that their full preparedness would be secured for the time that the demands of battle would be made on these sea forces. No one doubted that the previous employment of the torpedo-boat flotillas very little corresponded to their real purpose and could only be regarded as an expedient until vessels less valuable and more suitable for the work of patrol could be available in sufficient number. Freeing the torpedo-boat flotillas for purposes of attack before this time would, however, only have been possible if it had been resolved from the start to carry out the protection of the German Bight against U-boats and mine layers primarily by mine barrages instead of by naval forces. This did not happen until September; up to then the opinion prevailed that by such a mine barrage the movements of our own forces in the event of the battle expected here would be too greatly hindered.

The result of this method once started was, however, that more extensive offensive undertakings could only but seldom be carried out and were in general limited to occasional advances from the patrol line, which, limited in number of forces as well as extent, never attained the proportions of a large scale exploration or a torpedo-boat undertaking. Even if such advances could not possibly have led to a meeting with the enemy, still, quite apart from their moral significance, they would of course have resulted in greater clearness concerning the actual behavior of the opponent.

On 6 August, the intelligence office at Westellenbogen, on the Sylt, reported that several clouds of smoke were in sight off Esbjerg. The immediately following scouting by airplanes gave as little support

for the belief in an enemy undertaking in Fano Bay as did an advance of the *Mainz* with a group of the Eighth Torpedo-Boat Flotilla, which brought those forces on the next morning at dawn off Esbjerg.

On 8 August, after an airplane had tried, in a western direction from Borkum, to establish how far the English exploration extended toward the German Bight without returning, the second in command of the torpedo boats proceeded with the small cruiser *Rostock* and the First Torpedo-Boat Flotilla during the night of 9–10, August toward the western sector south to north as far as 100 miles outside of Helgoland. When a radial advance of the torpedo boats was ordered the distance between the boats grew rapidly greater and where they turned around at 100 miles distance from Helgoland amounted to almost 16 miles. In spite of a bright moonlight night it was, therefore, not established, in view of the comparatively small number of boats for the large area, that enemy forces were certainly not located there, still less, however, that the attempt would succeed, in this case, of gathering even a small number of boats for the attack. The advance was carried out with insufficient means. Consequently, the best prospect of success, besides surprise, that of being stronger than the opponent, was primarily abandoned. However, it did not lead to contact with the enemy. Only one boat, *V–189*, believed it saw two enemy destroyers, which it reported between 12 and 2 a. m., in 060–E and 042–E, about 80 miles west of Borkum Reef. The report was later amplified by the statement that in addition two large vessels, apparently armored cruisers, the type of which was not to be made out, had been sighted. The boat had been attacked by one of the two cruisers and had withdrawn from the attack. The fleet command therefore believed that an English mine undertaking against the German Bight could be concluded, and took the ships sighted for vessels of the *Apollo* class. This view was also shared by others in the fleet. It was even hoped that sighting these forces meant perhaps the fundamental transition by the English to the close blockade and not merely a detached advance.

REGULATIONS GOVERNING TRANSPORTATION OF TROOPS (GERMAN).

Source: Reliable. (28.) **10 February, 1921.**

Political or military grounds may render it necessary to organize troop fleets for the transportation of expeditionary troops. A troop fleet consists of war vessels, troopships, or auxiliary ships. The Emperor orders the organization of transport fleets. This order in time of war will be effected through the chief of the Navy General Staff acting in conjunction with the Secretary of the Navy, the

Prussian War Minister, and the chief of the Army General Staff. In time of peace the order is executed by the Secretary of the Navy, acting in conjunction with the interested officials.

The following points are taken into consideration in the organization of transport fleets:

(*a*) Size of the transport fleet.

(*b*) Distribution of the troops on the ships.

(*c*) Distribution of the warships and the auxiliary ships.

(*d*) Appointment of commanders of the transport fleet (they must be Navy officers), commanders of the expeditionary troops, and commanders of the transport and troop ships.

(*e*) Destination and, when necessary, the route.

(*f*) Employment of the troop, war, and auxiliary ships after the landing of troops has been effected.

The appointment of the general commander in chief is made by the Emperor, who grants him his commission. The decision of the abandonment or change of destination rests with the commander in chief. Further details in regard to his position and authority may be found in Appendix L of the "Important facts in connection with the mobilization of troops for enterprises outside of Europe."

The commander of the transport fleet is responsible for seeing that the transport reaches the prearranged destination or the one subsequently ordered by the commander in chief. Before the departure, or when necessary during the journey, he receives information from the chief of the general staff and has to furnish this information to the commander in chief when requested. During the journey he alone is responsible for all movements and control of the transport troops. His orders must be transmitted immediately to the commanders of the transport ships and unequivocally followed by them. The crews of the troopships are immediately responsible to him. His duties consist of:

(*a*) Fitting the troopships with a signal crew and with signal implements.

(*b*) General oversight of the commanders of the transport ships.

(*c*) All tactical and nautical measures that appear necessary for the safe conduct of the fleet.

(*d*) Drawing up of battle lines.

(*e*) All measures that are necessary for the protection of the transport ships against enterprises by the enemy.

Whenever possible the commander in chief has to abstain from intermeddling with the personal service of the transport fleet. His authority ends with the debarkation of the expeditionary troops.

Debarkation.

The commander in chief is in charge of the debarkation. After consultation with the commander of the transport fleet, he decides the landing point.

The preparation for debarkation takes place partly in the home port, partly on the transport ships, and partly in the foreign port. In the latter case, the preparations are in charge of the troops already there, the consular officials, and the commanding officers sent in advance.

The following officers are at the service of the commander in chief and the duties are the same as for embarkation:

Division inspector.

Harbor commander A as well as division commander A.

Harbor commander B, etc.

Crews of the lighters and tugs, transport officers, cargo tenders, troops, and officials of the port of debarkation.

At the port of debarkation the division inspector is represented by debarkation commanders—navy officers attached to his staff. The debarkation commanders have no disciplinary authority over the personnel appointed by the division inspector, but these are obliged to obey the orders of the debarkation commanders.

The harbor commanders, in conformity with their instructions, can issue orders to the transport officers and the debarkation commanders relative to the service on the ships in connection with the debarkation, but, nevertheless, they have no disciplinary authority over them. Debarkation detachments will only be formed when a large number of ships are unloaded at the same time. The officers trained in the transport division will be given the preference. The troops, with their complete equipment, including horses and vehicles, must be disembarked and must be ready for engagement immediately. Things will arrange themselves according to existing conditions, and on occasion it must be decided by the competent commanders as to whether a portion of the provisions from the ships should be taken on land by the troops; for example, food and fodder for the first days immediately following debarkation.

The station commander must draw up a plan for the regulation of the debarkation, and those in charge of the debarkation are responsible for its execution and must also issue the debarkation order.

The following points must be included in the plan of debarkation:

(1) Order of the ships and troops, the taking along of the luggage and the equipment.

(2) Distribution of the lighters and tugs to the transport ships.

(3) The journey of the towboats. Their order is to be so arranged that the lighters can be completely unloaded before they return to the ships; if in exceptional cases this is impossible, things must be arranged in accordance with existant circumstances.

(4) Arrangements whereby divisions, ready for march and engagement, may be on land as soon as possible.

(5) Bivouac locations and lodgings.

(6) Unloading of the special supplies of ammunition and sanitary articles. Arrangements for the storing, administration, distribution, and forwarding of these supplies.

(7) The unloading of the bulk articles. This shall only begin after the troops with their equipment have been disembarked, and it is to be so arranged that they can be received and stocked on land in an orderly manner.

The following points must be covered in the debarkation order:

(1) Name of the debarkation commander as well as his duties.

(2) Arrangements covering the provisioning on the debarkation days.

(3) Regulations concerning pocket ammunition, emergency rations, and rations.

(4) Instructing the men in the conduct during debarkation and on the lighters.

(5) Safety measures.

(6) Preparation of the luggage and clothing sacks.

(7) Unloading of the animals.

(8) The position and distribution of the men.

(9) The boarding of the men.

(10) Plans of the landing and bivouac places.

(11) Unloading and acceptance of the equipment from the lighters.

(12) Employment of the special provisions as far as they will go.

Under like conditions, the debarkation requires about the same length of time as the embarkation.

The disembarked troops must clear the harbor as soon as possible; care must also be taken to clear the depositaries.

It is practical to have a proper ship in every debarkation harbor to act as a central ship, so that in case of necessity it may serve for the lodging and provisioning of the debarkation personnel and also as a depot.

Reembarkation in Foreign Territory.

Reembarkation in foreign territory may be undertaken for the displacement of the troops within the territory of operation and for the repatriation of the troops.

The supplying of the ships takes place through the commander in chief out of the number of ships rented for the transfer from the home port and, further, out of the number of ships placed at his disposition; also through the renting of merchant vessels. In urgent cases, or on the occasion of small displacements, use should be made of war vessels which are at liberty, this with the consent of the commander in chief of the Navy.

For the repatriation, the ground principles will be in the hands of the same home officials as at the time of departure. The renting and fitting up of the ships as well as the establishment of their utility

(in so far as the ships are fitted up in a home port) will be under the jurisdiction of the Navy transport department. If the fitting up of the ships is left with the expeditionary corps, the above-mentioned regulations also hold good for their obtainment and fixtures.

In conformity with the regulations of the home authorities, the commander in chief will arrange a repatriation plan corresponding to the embarkation scheme. The necessary number of hospital ships may be requisitioned from the home authorities. The troop-ships should be freed as soon as possible of the wounded and ill. The reembarkation of the troops and equipment corresponds in detail with the debarkation and is in charge of the same officials. The transmission of messages and intelligence falls under the same regulations as during the outgoing journey.

The debarkation in the case of troop displacement is in charge of the commander in chief. The debarkation at the home port is in charge of the Navy transport department, to which may be assigned, when necessary, officers, medical officers, and officials. The representative of the Navy transport department has to make preparations for a speedy debarkation; must work in conjunction with the harbor, medical, and customs authorities; must arrange for the places to quarter the troops and the locations for the storing of the luggage and equipment; he is in charge of all the details governing the debarkation of troops and equipment; the examination of complaints as well as deciding relative to their further negotiation; make arrangements with the representative of the railroad department (or on his own initiative if there is no such representative) concerning the reexpedition of troops and equipment; the establishment of the date when the transport will be unloaded; and the return of the ship to the ship company.

(Note.—The next division takes up the subject of the renting of merchant vessels for transport purposes and takes up in detail the points to be considered in their selection; i. e., their speed, consumption of fuel, size, etc., as well as the procedure to be followed in arranging the terms and contract.)

General points to be included in the contract of an especially rented vessel acting as transport:

The transport commandant and all staff officers, medical officers, and officials must be provided with a completely fitted-up cabin for their personal use. All other first-class passengers should also have a private cabin as far as it is possible. If this should not be possible, then several must occupy the same cabin, but at no time should there be more than three in the same cabin. Second-class passengers (deck officers, noncommissioned officers, and underofficials) must be arranged from two to four in a cabin of the second-class. Third-class passengers must have divided rooms on the upper, chief, or lower deck, with sufficient light, good ventilation, and electric light.

In all the salons, the part allotted to the officers must be separated by curtains from that of the men. In the third-class apartment, at least 3.8 cbm., must be allowed for each person. Two mess rooms must also be supplied—one for the first and the other for the second cabin; also, when possible, a room for the underofficers, lodged in third-class apartments. This latter cabin may be used for a salon for the underofficers, but then must be fitted with removable bunks or hammocks. The men eat in their salon or on the deck. All salons and mess rooms must have heating arrangements. If this detail is to be omitted, then special arrangements must be made. There must be a ventilator for every side window in the salons and mess rooms. Besides the arrangements already mentioned regarding ventilation, wind sails must be provided for the hatches and must be produced at the request of the transport commander. On the lower deck, for every salon of 200 cbm. there must be one wind-sail—for a room from 200–400 cbm. two wind sails; and above 400 cbm., three wind sails. On the upper deck, for every salon from 300 cbm. there must be one wind sail, and two wind sails for every room exceeding 300 cbm. The cross section of the wind sail must measure at least 0.3 qm. and the length must be so measured so that the upper end projects above the deck construction. The ventilators over the beds have to be fitted with a protector on the lower side so that the air will not blow on the sleepers. For voyages through the Tropics, electric fans must be supplied in the salon and mess rooms of the cabin passengers. The cabin must contain a stationary bunk or sofa bed with fittings, and for every traveler there must be a wash-stand, a device that can be made into a table, and seats; further, the cabins of the transport commander, the transport adjutants, the transport doctor, and the transport quartermaster, as well as the rest of the travelers previously designated, there must be a proper writing table. The cabin of the quartermaster must also be fitted with a safety box for papers which is fitted with shelves and can be locked. The bunk fittings consist of a mattress filled with horsehair or sea-wrack, a bolster filled with horsehair, two woolen covers in fine linen or cotton cases, a sheet or white mattress cover, and a pillow case. For the storage of articles of value, uniforms, etc., a room must be placed at the disposition of the transport commander, and for the other cabin passengers when possible.

Whether the third-class passengers have either stationary bunks or hammocks, the following points must be observed: Every bunk must be at least 1.80 m. long and 0.60 wide. When one bunk is placed over the other, the lower bunk must be at least 0.20 m. from the floor, and the upper, at least 0.80 m. from the ceiling. The bunks must be made of metal or freshly varnished wood. The bunks must be arranged, if possible, lengthwise. Not more than two bunks may

be placed above one another. The bunks must be distinctly numbered, and the space between the bunks must be at least 0.60 m. wide so that a bunk can be reached without climbing over the others and that the places on the hatches may not be dangerous on account of the draft or dampness. The bunk fittings for the third-class passengers consist of sea-wrack mattresses, bolsters in rough linen or cotton covers, sheets or mattress covers, and two cotton or woolen covers which must be furnished by the ship company. The second cover will only be furnished on the order of the transport commander. In order to change the bed linen after a journey of 14 days, a second supply of bed linen must be furnished. The ship has to carry a surplus of 2 per cent of mattresses and bolsters. Two wardrobes must be placed in the cabin itself or close by it. The space between the bunks and the wall should be, when possible, left free. If the bunks are removable, then the space next to the wall is not necessary. If it is especially ordered, in ships with iron decks the space between the bunks must be planked or covered. In the sleeping rooms, sufficient number of jackstays for the hammocks must be provided, and they must be so arranged in consideration of the hatches and other objects that all sleeping places can be used and that the places on the hatches will not be dangerous on account of the draft and dampness. The hammocks must be at least 45 cm. apart, be numbered beginning with the No. 1, and be arranged preferably according to the length of the ship. The administration furnishes the hammocks and their fittings. Two wardrobes must be supplied for each hammock and be placed close to it. During the day, for the putting up of the hammocks and knapsacks of the men, lath holders at least 30 cm. above the floor must be arranged in rows in sufficient numbers on the bulkheads or walls of the men's quarters so that each man can get at his knapsack without having to lift others.

For the accommodation for 100 hammocks (lashed) at least 14 cbm. are necessary, and for 100 knapsacks at least 20 cbm. If there are more than three hammocks in a row, the lower lath bank must be covered with sheet iron, so that it can be walked on. The mattresses, bolsters, bed linen, covers, and other articles and equipment of the ship, in so far as they are not required on the return voyage, may be left with the troops at the port of debarkation at the request of the transport commandant in payment of a compensation, taking into consideration their original cost and the wear and tear of usage. The receipt for these articles must contain the terms concerning the eventual deterioration. The rooms for the men must be fitted with folding tables or tables which may be placed high out of the way, so that when they are not in use they may be folded against the wall or hung on to the ceiling, and the rooms must also have seating arrangements for at least 50 per cent of the men. The loose feet of the

benches must be fitted with hooks so that the seats won't fold up. In the neighborhood of the tables, shelves, fitted with laths for the holding of the dishes, must be arranged, as well as racks for the utensils. In all the rooms for the men must be arranged several mirrors and a receptacle filled with tea or water for drinking purposes. If it is to be filled with water, it must be fitted with a filter. Faucets must be attached for drawing the water. The men's quarters must be so completely supplied with lighting fixtures that the quarters will be sufficiently lighted for study, cleaning of weapons, letter writing, etc. The lights placed in the ceiling must be covered with shades or stockinglike covers made of black or green bunting, so that the men resting in the room may not be annoyed by the light. A sufficient number of auxiliary lamps must be on hand in the event of the failure of the electricity. All articles which can not be used in the men's quarters will be taken away and the space thus gained will be fitted with tables and seats. Care must be taken in the setting up of gun holders according to tested models. Also shelves for musical instruments must be set up according to the need for such. Locked rooms, to which access may be had at any time during the voyage, must be arranged for the accommodation of the luggage.

A luggage room with 1 cbm. space for every person of the first and second class must be supplied; also a luggage room for the passengers of the third class, allowing 0.1 cbm. for each person. Besides in the third-class luggage room, there must be a space of 10 cbm. for each 200 men to accomodate the knapsacks of those who are ill, the effects of those who have died en route, and the supplies for the troops, etc. For the latter two luggage rooms, in place of one room, several rooms may be used. A room must be arranged as a bureau, which may be locked and is fitted up properly for this purpose and has electric ventilators; the appropriation of other rooms for this purpose may be arranged for after special agreement. The rooms may also be used as living rooms. In case it is required, the ship company must arrange a special room as a ship post office and fit it up with tables and other equipment for preparing the mail, as well as with cases for the safe-keeping of the post and the working equipment. This room serves as a living room for the postmaster. For every 1,000 men on the transport, three proper rooms, or at least two on every ship, must be arranged for the accommodation of prisoners and others arrested. These rooms must lay at a distance from the rooms of the men and so fitted up that they may be used continuously during the entire voyage. Good ventilation is especially necessary. The ship captain has also to reckon on the possibility of another room being used for this purpose during the voyage. At request after agreement, fireproof rooms for the accommodation of ammunition must

be prepared At request a further room for the safe-keeping of parcel post for the relatives of the foreign service must be arranged for.

The men's quarters must, under all circumstances, be protected from any pollution from flowing closets or other discharges. The discharges must reach to the water. Among the life-saving equipment of the ship must be included a gas buoy for night service. At the head of each bunk, or in a place where they may be easily reached, the ship company must place life belts.

The large ballast tank for fresh water must be cemented before being filled. All drinking water must be absolutely pure and have been twice filtered before the voyage. If the ship company does not have a fresh-water filter with the general filtering fixtures, then filters in conformity with the size of the transport must be arranged for and placed in different parts of the ship. The filter devices must conform to the sanitary requirements, and, when necessary, be cleaned by the crew. There must be a supply of at least 20 liters of fresh water per head, to be used for drinking and cooking purposes. On journeys through the Tropics, the ship must be fitted with an operating ice machine, or an adequate supply of ice must be placed in the refrigerators for the use of the sick and for the cooling of drinks.

The ship company has to arrange for the sealing and closing of the coal, provision, cargo, and bilge rooms from the living rooms; likewise for an effective separation of the bilge water during the journey.

The cargo rooms placed at the disposition of the authorities must be so arranged that they assure the safe-keeping of the cargo. The hatches of the cargo rooms may be battened down if necessary. The pipe ventilators leading to the cargo rooms must be provided with a grating.

The free space on deck should allow plenty of space for the men and therefore should not be restricted through the storing of provisions and things of that kind. It must also be so protected from the sun that the men can remain on deck should be swung out. Weather cloths must be placed on the side of the boiler room in order to form a protection against the hot air coming from the engine and the ashes falling from the funnels. The ship company has to supply a sufficient number of deck stools for the first-class passengers, and tables and chairs for the other passengers to use on deck. As far as nautical grounds do not forbid, plenty of light should be supplied on deck so that the men can spend the evenings on deck in the Tropics.

Special washing facilities must be provided for the underofficers. The other men wash themselves on deck. The ship company has to place at the disposition of the transport commandant (captain) one bucket and one tub for every 10 men, as well as a sufficient quantity to replace any loss. Provisions must also be made in the men's quarters so that the men can wash their hands during the day.

Details of this are arranged with the transport captain. If the ship company must furnish towels, this must be stated in the contract. Three towels per head are necessary. There must be a sufficient quantity of bathing facilities so that a number of persons may bathe daily. The bathing facilities for the first-class passengers (single rooms with bathtub and shower with mechanical water supply) must be absolutely sanitary and satisfy the modest demands of comfort. Bathing facilities of like nature are desirable for the other passengers; simple shower or bathing devices are sufficient for this purpose, preferably ordinary canvas bathtubs with sea-water connections. A special bathroom must be provided for underofficers.

The ship company has to provide a sufficient number of closets and arrange for the systematic flushing and disinfecting of the same and for the delivery of a sufficient quantity of toilet paper for the closets of the men. The closet fixtures for noncommissioned officers must be separated from th se of the men. For the noncommissioned officers there must be one closet for every 25 men, and for the men, one for every 50. As soon as the transport captain demands it as a prevention against contagious diseases, every toilet must be fitted with a washbasin with flowing water, black soap, and a towel for the cleansing of the hands. The towel should be changed when necessary.

The troops have to clean the men's quarters and stairs, wash the bed linen and towels used by the men, clean the closets, and wash the decks after they have been used for washing, etc. In other cases, the ship company attends to the cleaning. The ship company furnishes the following utensils for every 100 men: 20 brooms, 2 dustpans, and 20 pails, which are for the use of the troops only.

These articles will be turned over to the transport captain. Besides these things, the transport has to be sufficiently supplied with cleaning utensils so that the articles may be replaced in case of damage or loss. The ship company must also supply a reasonable amount of sand, sawdust, and disinfectants and insect powder and deliver it to the troops without compensation when they request it.

The ship company also furnishes a supply of soap, brushes, washing cloths, etc., for the cleansing of tables, benches, utensils, underclothes, bedding, and towels. Two hundred and fifty grams of white soap will be delivered to each man per week. A reasonable amount of clothesline will also be furnished to the transport by the ship company so that the men may dry their washing. For every 500 men the ship company must furnish a mangling machine for the ironing and washing of clothes.

As further supplies must be furnished (by the ship company) oilskin coats for the use of the ratings in bad weather; two letter boxes; a large number of cuspidors; matches and matchholders for the pipes

and cigars of the men; scrap baskets for paper and other refuse; unloading utensils (cargo nets, skins, slings) for the cargo, and especially an ample quantity of Jacob's ladders; a supply of plain boards, thin planks, joining devices (screws, nails, etc.), and carpenter tools, so that during the voyage rooms may be partitioned off and tables and cupboards made and repaired; several trapezes and bars with the deck marked off for their use, and also several deck games.

The army authorities must furnish further gymnastic appliances, music instruments, games, reading material, atlases, etc. The latter-mentioned articles are in charge of the transport captain, but the ship company has to follow his wishes in regard to their disposition and accommodation as far as possible, and at the time of debarkation has to furnish a receipt so that they may be reclaimed later. The ship company has to furnish a room fitted with the required shelves, dry and with locks on the doors, for the books; this room may be a cabin, the mess room, or in a special salon. After debarkation the ship captain has to give a receipt for all the articles furnished by the army administration, and if the transport will not be used during the return voyage, has to take care of them until he receives the necessary instructions in regard to their disposition. In taking over these articles the ship captain must give a receipt for each one. All the articles which are delivered to the troops for their use during the journey must be receipted by the transport captain personally or by his representative in accordance with the attestation drawn up by the ship company. At the time of the restitution of the articles in question, if there is any damage which is not the result of ordinary wear and tear, then the transport captain must furnish the ship captain with a receipt in that sense. The ship company will be compensated for such damage in accordance with its extent. In regard to the fitting of the kitchens, the consignment of baking utensils, the fitting up of a room for medical inspection, and the hospital rooms with their fittings, refer to previous paragraphs on this subject.

The ship company has to employ the necessary persons to take care of the washing belonging to the other passengers. If it is necessary, the ship company must supply a ship's barber, whose prices are regulated by the transport department.

In order to simplify the embarkation and debarkation of the persons on the transport, swinging rope ladders must be placed fore and aft. The question of the flag will be arranged by the contract. The flags must be furnished by the ship company.

If a few horses are taken along on the transport, they may be placed in their boxes on the deck. These boxes must be fitted with a lock and have a roof. Other fixtures are not necessary. If a large number of horses are taken along on the transport, then stalls must be fitted up on the deck or on the lower deck. If new decks must be

constructed, then they must have the same level and be arched in the middle. The stalls must be arranged in rows, so that the horses on the outside face amidship and the horses amidship face toward the outside. Spaces of 1.50 m. must be left between the stalls as passageway, and, whenever possible, a space must be left between the stalls and the edge of the deck so that they may be easily cleaned. The decks which are used by the horses must be covered with a wooden planking.

The floor of each stall must have a false floor, sloping to one corner for the draining. The size of each stall will depend on the size of the horse. (Here follows a detailed description of the stall, with exact measurements of each section.) The mangers—one for each horse—must be made of tin with rounded edges and corners. Straps must also be supplied to hold the horses during bad weather. These devices must not be placed in the middle stall, but at about the height of the withers. For the horses quartered on deck, protecting walls must be built in case of cold weather; these can be removed in good weather. (Here follows further details in connection with the stalls—their declination, etc., with exact measurements.) In constructing the platforms the air should not be shut off from the lower decks. The stalls should also have good ventilation, real or artificial. To expedite the natural ventilation, wind sails should be placed in the side windows. An ample supply of wind sacks should be provided which should ventilate the most remote corners by means of tin pipes. In the latter case, in so far as is necessary, electric fans, protected by wire wrapping, should be installed to assist the ventilation. For the lower rooms which have no side windows, and especially for the Tropics, artificial ventilation must be provided which will assure the suction as well as the exhaustion of the air. The conducting pipes must be made of wood or tin, which are built along the top of the stalls, and at about every sixth stall there must be a register. The machines must have sufficient power to force the air into the farthest stalls. The drainage of the stalls is done by means of pipes—on the upper deck leading to the outside, and in other cases to the bilge room. Care must be taken to supply sufficient drainage holes. The pipes must be amply large so that there will be no stoppage, and they must be covered with wooden tops which will only be removed when the stalls are being cleaned. (Here follows a detailed description of the passage deck for the horses.) The stalls on the decks must be protected from the sun by means of sails and flaps. It must also be seen to that the horses placed near the hatches have sufficient protection. Stalls must also be supplied for sick horses. The stalls must have electric lighting, and also be supplied with emergency lamps in case of the failure of the electricity.

The lamps must be shaded. A full supply of material for this purpose must be furnished in case the shades are burned. In regard to the drinking water, see previous paragraph on that subject. Distilled water should only be used in case of emergency and then must be mixed with fresh water. Fresh-water connections must be placed in each stall. These receptacles must be protected against impurities. Fifty liters of water will be allowed each day per horse. As disinfectants, the ship company has to supply every 10 days, for every 100 horses, 5 kg. of liquid creosol soap and 25 liters of creolin. Every stall should be provided with a fodder receptacle for holding the daily fodder. This is not necessary if there is a large fodder room close by. A room must be fitted up for veterinary purposes. The medicine is given out by the administration. Stall fittings must be given by the company. (Then follows a detailed list of the articles necessary.) A locked room has to be furnished by the company for the accommodation of these articles. For the articles which are in daily use, a space must be provided in the stalls. A room must also be provided for the harness, etc., and fitted with rods on which the things may be hung. For the loading and unloading of the horses, special gangplanks must be supplied, made with sides and a false bottom. These are supplied by the company. They must be whitewashed inside and outside. If the ship is not on the quay, the horses must either be taken on board by means of horse rope ladders or be taken in boxes. The inside of the walls and doors of these boxes must be padded. Rings for attaching the halters must also be on hand, and to diminish the shifting of the boxes. The extent of the unloading appliances must be stipulated in the contract. If other animals are taken on the transport, this must also be stipulated, especially in the contract.

The company has to furnish the provisions for the transport. Meals must be arranged in accordance with article B. The provisions, as far as possible, must consist of fresh food of the best quality and of the variety, at least, mentioned in the above-mentioned article. A large supply of cattle must be taken, but they must not impede the free movement on deck of the passengers. Besides, a large supply of fresh meat must be put in the refrigerator rooms before the departure. Care must be taken to replenish the stock at every port of call. Fresh lemonade must be served daily—free after each meal. (Here follows a description of the mode of preparing this drink and the supply of the necessary ingredients which must be furnished.) Drinks must also be taken on board—good beer and drinks containing no alcohol. These may be sold for the company, not for the attendants. This concession is arranged by the individuals drawing up the contract. Smoking and chewing tobacco, cigars, cigarettes, and clay pipes must also be on board. (Price of such is here arranged for.) The rices of all these things as well as of the drinks must be distinctly

posted in the neighborhood. Wine, beer, spirits of any kind, food, and chewing tobacco may not be sold by the crew to the troops. The company must apply a sufficient number of servants to attend to the service of the first and second class passengers; the men take the service of the noncommissioned officers in the third class. The transport passengers are not obliged to fee the servants. The company arranges with the employees in regard to this matter. The time at which the service ceases in the evening will be arranged between the transport commandant and the ship captain. Large ships should have a galley fore and aft. All dishes and cooking utensils must be furnished by the company. If the other articles (here the dishes are enumerated in detail) are to be furnished by the company or the administration must be arranged in the contract. If they are furnished by the company, they must be delivered to the transport commandant. Attendance and care of the horses and other animals on the transport must be borne by the administration; they also supply the fodder necessary for the journey. The company supplied the water.

If there is no physician on board the transport, the medical officers must care for any members of the crew who are taken sick. They must also undertake the medical examination of the crew if such is decided on after a consulation with the ship captain.

Such persons, and especially colored persons, can only be taken on board as servants if there is no danger of their transmitting any disease. The transport commandant gives the decision in cases of dispute after he has consulted with the transport physician. Colored servants must be kept distinctly separated from the rest of the crew.

The company has to furnish a hospital service adequate for 2 per cent of the number of persons on board. (A detailed description of the fixtures is given.) In cases of need, the hospital service may be extended to cover about 4 per cent of the number of persons on board by reducing the extent of the men's quarters. The ship company has to arrange for this in a short period of time when they are requested by the transport commandant to do so. The company has to fit up the extra space with the appropriate fittings at the port of embarkation. The hospital rooms must be so arranged so as to guarantee quiet, be well heated, have plenty of light and air at all times, and be of such a character that a thorough medical examination can be made therein. In all events, they must be at a distance from the engines, kitchens, storerooms, and toilets. The sick must not be placed in bunks above one another. The beds must be so arranged that there is access on both sides and should not be placed against the wall. They should be at least 45 cm. apart and at the same distance from the wall. The head and feet of the outside rows may be against the walls. The company has to carry out all the wishes of the transport

commandant and transport physician in regard to the accommodation of the sick, if it is in any way possible to do so. Light, removable bunks should be supplied for the attendants so that they can be removed in the daytime; shelves for luggage must also be placed on the side or end walls. The mattresses and bolsters in the hanging bunks must be filled with horsehair. In the hospital, seats must be supplied for at least a half of the number of persons therein and also a table. The administration has to furnish all hospital supplies for the needs of the troops. When it becomes necessary, the ship's apothecary must furnish free such things as may be required.

The company has to furnish the ship with a microscope, with oil immersion, for purposes of investigation. All linen and utensils required in the hospital must be furnished from the ship's supplies at the request of the transport commandant. If supplies and other articles are destroyed on account of contagious diseases, the imperial treasury will reimburse at the original cost. If the physician orders a special régime, this must be furnished instead of the ordinary meals. Any alcoholic or carbonated drinks must be paid for extra. The order must be accompanied by an attest from the transport commandant in regard to the purpose of the drinks. The company is obliged to pay a reasonable sum to the persons attending the members of the crew who may be taken sick. Sick first-class passengers will be cared for in their cabins when this is feasible. Nevertheless the company must supply an appropriate room fitted with two separate bunks. These cabins will be used and only appropriated for hospital purposes in the case of sickness. The previous occupants will be given other cabins. In case of further needs in this direction, appropriate steps will be taken. A steam sterilization apparatus must be supplied for the disinfecting of clothing, bed linen, etc., of those persons with contagious troubles. The disinfection is carried out under the supervision and at the orders of the medical officers and is done by the crew. When a disinfection of the ship must be made, this is done by the company.

The company also has to carry, free of freight charges, all objects, including ammunition, which are carried on the transport, including the animals and their fodder. At the time of departure as well as the return, all services in connection with the loading and unloading of the ship have to be carried out by experienced stevedores at the cost of the company, acting under their orders, in conformity with instructions issued by the administration. The administration is, however, permitted at any time to take over the supervision of the loading and unloading through an appointed representative. The company appoints overseers and other competent persons to take charge of the stevedore work and bears all expense. The company must also furnish all materials for this work. The administration is in no way responsi-

ble for the payment of overtime or night work. The transport department or the appointed bureau should inform the company in ample time as to the extent and nature of the cargo, especially in regard to heavy freight or objects of unusual size, as well as dangerous articles, so that the company may draw up the necessary plan of work. The cargo will be placed along the side of the ship. Every division of the cargo must be accompanied by a freight bill in duplicate, giving exact details in regard to quantity, weight, nature of objects, etc. Upon certification of this bill, the cargo will be taken over by the cargo officer of the ship. One copy of this bill is given to the cargo offcer; the other copy will be given to the individual or company making the delivery. Upon presentation of these bills, the company makes out a bill of lading. A decision in regard to the loss or injury to the cargo will be immediately established by negotiations with the ship captain. These negotiations will form the base for the question of repatriations, and it must be distinctly stated therein whether eventual loss or damage will be acknowledged by the ship captain. All rooms which are not used by the administration and are given out to other passengers or cargo by the company with the permission of the administration, one-half of the receipts for passage or carrying of freight must be delivered to the Government. The journey can not be delayed more than three days as the result of such action.

The company undertakes to notify their representatives in the foreign harbor to have ready on the arrival of the transport a sufficient sum of money of the country to provide for the needs of the transport. This will be arranged by telegraph at the last port of call before arrival, and the expense of the telegram is borne by the Government. In regard to foreign exchange, see section 7. If the agents are unable to supply the necessary money, then the ship advances the money as far as its means permit. If any exchange is necessary for this purpose at any of the ports of call, the Government must bear all expense therefor in so far as it is interested in the transaction. The company has the right to select the cheapest method of supplying the money and as far as possible, certify to their demands through a certification of the competent German consul as to the rate of exchange. The payments are made to the treasury officials or the treasury commission of the transport against compensation in cash or by receipt. If the transport commandant is in possession of a letter of credit, the payment must be indicated therein if no compensation has been made in cash. The transport commandant may demand of the ship's agents a certification from the German consul in regard to the day's rate. The company must undertake to have at least 200 marks per 100 men so that the men may purchase drinks, etc., independent of changing into foreign money. Foreign money is to be accepted and exchanged at

the rate stipulated in the contract if this is returned an hour before the departure of the ship. The company is obliged to supply through their agents at every port of call a certain amount of foreign money (amount given). The acceptance of this money follows in general the above principles. Money not required will be taken back by the agents without compensation if such is returned an hour before departure. If the transport commandant so orders, a larger amount of money for exchange must also be provided.

The exact time of departure of the transport must be stipulated in the contract. For the regular stop in the home port, the administration is not liable to any indemnification. If the departure of the ship is delayed more than 24 hours at the request of the administration, for every full day of delay demurrage is allowed at the rate stipulated in the contract. Embarkation must take place 24 hours before the departure of the transport from the home port; in foreign countries according to the regulations of the overseas officials. Two hours before departure the ship must be entirely ready. The especial articles destined for stops in the Tropics, ventilators, etc., must be set up.

The outgoing and return journey of the ship follow a plan set forth in the contract. This journey must be made as rapidly as the speed of the ship permits. The troops take the position of passengers but are under military authority. The ship's captain must assist the transport commandant in maintaining order. On the other hand, the transport commandant has to take care that none of the men interfere with the work of the crew or prevent the execution of their duties. In case of danger or extreme necessity, the ship captain or his representative has the right to give orders for the safety of the troops, the safety of the ship, and to maintain order on board. Such orders must be obeyed without waiting the orders of the transport commandant. The troops will be informed of this condition by the transport commandant. Other harbors outside of the regular course can only be entered in the most urgent cases, such as the landing of sick persons, the taking on of coal, fresh provisions, and, on occasion, for the taking on and off of colored laborers. Any port of call where there is danger of contracting contagious diseases must be omitted from the course, irrespective of the fact that such port was included in the original itinerary. A ship's boat, properly manned, must be placed at the disposition of the transport commandant at every port of call. The company undertakes to supply the other members of the transport with whatever may be necessary in this regard. Any expenses attached thereto will be allowed. Any harbors or ports of call in which there may exist the possibility of members of the transport going ashore must be stipulated in the contract. The stop in such ports will only be long enough to allow

the members of the transport several hours on land during the day. The captain of the transport has the right to help other vessels in distress or to take them in tow with the permission of the transport commandant. The eventual compensation will be divided between the administration and the company after the crew has received its portion. At the harbor of destination the ship has to lay as close to land as the depth of the water and safety will permit, if the transport commandant does not desire otherwise. As far as the circumstances permit, the ship has to enter the harbor ready for unloading, with open hatches, if there is no reason to the contrary.

If war is declared during the voyage the ship captain has to follow all the orders of the transport commandant. Any extra labor which may be caused on account of this condition and which has not been stipulated in the contract will be authorized by the administration. Just what this labor will be must be arranged in writing as soon as possible between the ship captain and the transport commandant.

The company is obliged to allow the necessary time for debarkation, unloading, and the taking on of other troops and equipment, and for the systematic settlement of all business details in regard to the administration affairs without especial indemnification. If holidays fall within this period and the transfer of troops and equipment is delayed thereby, these days are not counted, nor are those in which the transfer and unloading are delayed by bad weather, heavy seas, or unusual weight. If for the latter reasons a full day of eight hours can not be put in, then this day counts for a full day. If the ship arrives ahead of time, then the period of detention in harbor allowed by the contract begins just that much sooner, unless other provisions have been made in the contract. If time is gained through the expeditious unloading of the ship, the transport commandant is authorized to take this time into consideration in reckoning the time in the ports of call. If the return journey is delayed beyond the prearranged time of the administration, then the company may claim indemnification from the Government as well as claiming the cost of maintaining the transport during this period. (The cost of maintenance is herewith given in detail.) In reckoning this cost, here and in similar cases, only those days in which the men have taken the noon meal on the ship will be counted. In regard to the exact length of the stay in the harbor of destination and especially when the departure is delayed by the administration, the ship captain has to issue a certificate signed by the transport commandant or by the person in charge who is responsible for the delay. For the unloading period in Germany after the return, no indemnification can be claimed.

The company is obliged to carry out the wishes of the transport commandant in regard to making journeys en route which have not

been stipulated in the contract. In these cases the administration has to pay the cost of maintenance according to the terms of paragraph 11, and must pay besides a daily compensation arranged by the contract. (Here follows detail in regard to the compensation of the company, the outfitting of hospital ships, the marking of cargo, and the conditions and regulations in connection with transporting ammunition, etc.)

Unloading and Debarkation.

General points:

The ordinary regulations governing unloading are so well known that it is not necessary to give more than the general points. In the technical difficulties of debarking a small detachment, the debarkation is only possible when the sea route is perfectly safe and the possibilities of any interruption are highly improbable. This will be the case when we are in control, even if only temporarily.

If the expeditionary corps has to be transported to a distant country then the debarkation may only be carried out without difficulties when there are already some of our troops in the harbor or landing place or the troops of an allied power. In these cases commanding officers will be sent out to arrange the unloading, debarkation, and further transport of the troops. The duties of such are as follows: (1) Preparation and accomplishment of the debarkation; (2) preparations for the lodging and maintenance of the troops, health measures, the preparation of pure water, arrangements of springs and horse ponds; (3) arrangements for the storing of equipment, ammunition, and supplies of every kind; (4) preparations for the drawing up of the troops, messages, preparation of transportation (carts, porters, river boats, etc.), the engaging of guides and interpreters; (5) preparation of the port of debarkation as headquarters, and, if necessary, for its fortification; (6) details of monetary exchange for the first needs. These commanding officers will take charge of all supplies, etc., which have already arrived. The personnel of this command will constitute the headquarters staff. When there is an association with allied powers, the German flag must be raised on German property.

If one is in control of the sea but is not in possession of any harbor, the landing is only possible when the fleet protects a portion of the shore land from any operations by the enemy. By the debarkation of the first detachment, one can not count on the use of the unloading devices and harbor facilities on the enemy coast, so it is preferable to make the first landing on the free coast or in a protected bay. The landed detachment must be strong enough to assure the safe landing of the rest of the troops or to take a proper harbor. If after the capture and preparation of a harbor the unloading must still

take place on the open coast, it must be carried out in the manner which seems best in order to expedite the unloading. In order to protect this harbor or landing place, one must take into consideration the preparing of fortifications, batteries, etc., and also the employment of heavy guns from the battleships or the heavy artillery. In all undertakings on land, great secrecy must be observed in order to bring about a surprise; a false landing can divert the enemy's attention from the real undertaking.

A place which will be suitable for landing must, if possible, be established in time of peace. This information is to be carried out through officers of the army and navy and the results transmitted to the general staff of the army and navy. This information, accompanied by maps and sketches and sailing instructions, will form the basis of the choice of a landing place. Landing on the open coast on which the first surprise landing must take place must not be too far from a protected roadway or a harbor, which the first troops must occupy to assure the landing of the rest of the detachment. It is favorable when the extent of the landing place enables the anchoring and unloading all along the front. Sand heaps provide a protection against the wind, but, on the other hand, they decrease the facilities for the boats, etc. If the open coast permits liberty of action, then it is preferable to make the landing at a river mouth or in a sheltered bay, as it is more protected from the weather. It must be determined whether the beach is rocky, muddy, pebbly, or sandy; furthermore, if the descent is regular or irregular. For the building of the landing bridges, it is necessary to indicate on the maps and sketches the nature of the strand, so that the materials needed and the design of the bridges may be determined in general. It is not sufficient that the information simply indicates the general conditions, but it must also include the position of ditches, canals, channels, etc., in the neighborhood of the landing place, which are not visible on the map and where it would be necessary to construct bridges; the places where barges might also be placed must also be indicated. Furthermore, the differences between high and low tide must be indicated, as well as the position, direction, and power of the ebb and flood, and also whether heavy seas are found at the landing place, and to what extent. The general conditions inland must also be indicated. The country shall, when possible, present a protection for the landing place, allow an advance on the neighboring harbor without too many difficulties, and permit rail and telegraphic connections with the already existing lines without too great labor. It is desirable when the building conditions permit accommodations for the troops to furnish extra material for construction and hide the view of the landing place.

Landing on Open Coasts.

Since the landing on the open coast entails certain difficulties which are not existent in the case of a harbor, certain points will be made which will assist in overcoming these difficulties. The possibility of landing on an open coast is largely dependent on the wind and its velocity. Land winds permit a landing even in the case of fresh winds, while sea winds, even when not strong, render a landing difficult or impossible on account of the heavy seas. (Here follows a detailed list of the things necessary for landing purposes—the size and power of the tugs and barges, method of unloading the animals, etc.) During the voyage the troops must be exercised in the various preliminary details incident to debarkation and unloading and when the transport squadron nears the landing place several war vessels will advance and place themselves in a position to indicate the place of landing in conformity with the prearranged plan. At a given signal the marine corps go on land first to prepare for the others. Under their protection, general staff officers assisted by navy officers undertake the indication of landing places, determination of anchorage for the single transport ships, and the position of the landing bridges, marking them with flags or posts with written indications. The transport ships then take their positions in accordance with these indications. It is favorable for the landing if the transport ships anchor a short time before high tide, so that the barges may go on the strand at high tide or shortly after. The landing takes place immediately after the anchoring of the transport and at a given signal and in conformity with the "landing orders" given en route.

These latter consist of—(1) Approximate position of the landing places with reference to each other according to the maps or sketches; (2) regulations governing the conduct of the men in the boats and at the landing (means of keeping the clothing and ammunition dry); (3) prearranged signal for the commencement of the landing; (4) indication of the transport ships to be loaded simultaneously or the order in which they are to be unloaded, with the indicated position on land for the unloading of each ship; (5) as far as possible, marking of the barges which must be placed on the strand to expedite the unloading of horses and vehicles; (6) beginning of the construction of the landing bridges at the indicated positions; (7) agreement in regard to the clothing and outfitting of the troops for the landing; (8) agreement in regard to the maintenance of the troops, the supplying of emergency rations and provisions, regulations as to what articles of the ship's equipment shall be taken on shore; (9) conduct of the troops after landing—marking with flags of the places in which the separate divisions will congregate (these flags must be colored); (10) quarters of the commanding officers of the landing troops; (11)

arrangements in regard to the transport ships after their unloading or the indication of further orders (quarters of the sick); (12) agreements as to the transfer of the direction of the unloading to the debarkation command, which issues all other necessary instructions in regard to the details thereof.

In general, the debarkation follows these outlines: At the signal for the debarkation, the transport commandant takes over the direction of the unloading, and at his orders the debarkation commanders take charge on each boat. These, for the carrying out of the allotted tasks, will be increased from the general members of the transport, especially the pioneers. Their tasks consist of the following duties: (1) operation of the unloading machinery; (2) the stationing of the cutters; (3) the establishment of the swinging booms; (4) the explanation of the falling ropes and Jacob's ladders; (5) loading of the cargo boats and letting them down to the water; (6) the building of ferries either on deck or alongside; (7) the loading of the same with vehicles and animals; (8) the fitting up of guns, lumber, and ammunition wagons with rubber sacks and buoys in order to float them to shore; (9) the arrangement of the falling ropes for the horses and arranging to swim the latter to shore; (10) the fastening behind the steam cutters of the boats to be towed to shore and the swimming army equipment; (11) the manning of boats which are not towed.

Important points, such as 3, 4, 6, 8, and 9, can often be arranged before the anchoring of the vessel, even during the last hours of the journey. The commander in chief decides as to the order in which the troops shall be landed, considering the fact that as soon as possible complete divisions with their most important equipment must be on land and ready for engagement, to which shall be added, as soon as possible, the animals and the rest of the equipment under the proper command. The pioneer companies delegated for the building of the bridges go to work as soon as possible; at the very latest, at the moment of the signal for unloading. The activity of the troops begin as soon as they have left the boats, either on land or in the water. They therefore have to attend to the landing of the swimming animals or equipment or those put on the strand. All units must remember that a successful landing on an open coast can only be effected if every individual assists to the limit of his ability.

As has been mentioned before, it is of the most extreme importance that the troops first on land should take a harbor or a protected roadway where the rest of the troops and equipment and the reinforcements may be landed with the assistance offered by the quais and unloading facilities on land.

(Here follows a contract form for the renting of a transport ship; a contract form for the transporting of troops on a ship which has its regular route; a plan of embarkation; a roster of ship's officers; table for the distribution of fodder; table for the giving out of ammunition; table for the giving out of special supplies; employment of the cargo rooms for heavy freight and another table establishing their employment for the storing of provisions; table giving details in regard to the number of persons on the transport.)

REGULATIONS FOR TRANSPORTING TROOPS BY SEA (GERMAN).

(5599.)

Source: Reliable.

The first part of these orders effect all transports carrying more than 30 persons and for all members of the marine and the Government of Kiautschou attached to the above-mentioned transport. Their assignment, clothing, and appanage fall under the marine orders relating thereto.

The procuring of the transport, the assignment of the officers, medical officers, officials and men, and their transportation to the harbor of embarkation is govenred in each single case by special regulations, as follows: The War Ministry has the supervision of outgoing transports and the competent foreign commanders that of the returning transports. These regulations cover all necessary points concerning the direction of the transport (fittings, manner of assigning the men, fees, methods of payment, etc.), as well as information in regard to the journey (transport ship, transport commandant, route, and contract). The foreign headquarters staff is informed by the War Ministry by telegraph as to the scope and kind of heavy freight assigned to the steamship; in like manner the War Ministry has to be informed by the foreign headquarters staff of the like details in the case of a returning transport. In telegraphing this information, the number of troops on board, the day of departure, and the name of the commandant, etc., must be abbreviated. The headquarters staff has also to furnish a written communication as soon as possible covering the same points. If there are any insane or nervous invalids on board whom it will be necessary to consign to asylums or sanatoriums, the name and grade of each must be telegraphed to the War Ministry immediately after embarkation. The transport department has the supervision of the embarkation of larger transports in German harbors. Their orders must be followed explicitly. The transport quartermaster assists the embarkation commander appointed by the transport department. The quartermasters report to the embarkation commander on board the ship two nights before embarkation.

They must be supplied with the number of men, arranged according to thier grades, and also the number of passengers, so that they may furnish this information to the embarkation commander. The latter must be notified as to the arrival of the quartermasters in the harbor of embarkation. The transport captain is furnished as soon as possible with the embarkation order, which contains the regulations for the transport of the steamer up to the moment of its departure. On the arrival of the transport in the harbor, the transport commandant must furnish the embarkation commander with written information concerning the capac'ty of the transport, with attention being drawn to the differences in this information and that furnished to the quartermasters. At least 24 hours before the commencement of the embarkation, the transport commander or an old officer of the transport must announce the necessary details in regard to the space on the transport allotted to the troops, so that requests and wishes in regard to the distribution of the space which have arisen from a survey of the ship may be presented in ample time. After the representative of the transport department has declared the embarkation as finished, the transport commander enters upon his duties and obligations; up to this time he had to keep apart from the affairs attendant on embarkation and the business of the transport division. The headquarters staff issues all orders covering the embarkation in foreign harbors. They must appoint attendants for the insane and nervous invalids, which attendants may not be changed except on the most important grounds and must remain with the invalids until their ultimate placement after debarkation. These attendants, who are instructed in their duties by a medical officer, must be furnished with a certificate along with their ordinary papers, which certificate must be delivered to the medical officer upon their arrival in the home port or to the director of the institution in which the invalids are to be placed.

The equipment of the transport supplied to the outgoing transport by the military authorities will be used by the returning transport. (The details in regard to the transference of this equipment, either in whole or in part, was covered in the regulations of the first volume of this work, already translated and forwarded.)

If the transport contract allows the transport commander to issue any orders in regard to the ports of call, he should only avail himself of this right in the most urgent cases.

He must inform the War Ministry and the foreign headquarters staff in regard to the matter, and also inform the War Ministry as to the grounds therefor. He must also inform them when a harbor mentioned in the contract as a port of call is omitted from the itinerary. This telegram must be dispatched from the last harbor

at the latest. He must also furnish written information as soon as possible.

Only in the most exceptional cases should the ship captain be permitted to take civil passengers if the so doing will not discommode the troops and other contretemps are not to be feared. When such passengers receive the permission to go on board, they must be informed that they are subservient to the orders of the transport commandant and that any abuse will prohibit the continuance of the journey. They have no right to file any claims against the military authorities. They must agree to these terms in writing.

The cargo rooms not used by the military authorities may be used by the ship company for private freight. Nothing will be allowed to be taken which will interfere in any way with the health of the troops or the public welfare.

In general, the transport commandant supervises the fulfilling of all the orders issued by the ship company in the contract for the journey. Overt transgressions of any kind must be brought by him to the attention of the captain with the request for assistance. He must also report important cases in his report and if they occur on the outward journey. He must also inform the foreign headquarters staff, with a declaration as to the result of his interview with the ship captain.

The troops are in reality the guests of the ship. The general orders of the latter are also valid for the troops, allowing for the deviations cited in the contract. The following principles are valid on especially chartered steamships as well as on regular steamships. The captain of the ship is alone responsible for the safety of the ship and the men and the goods consigned to his care. The transport has no right to interfere in any way with the service of the ship; this must be carefully avoided. In cases of danger or necessity, the ship's officers have the right to issue orders as to the members of the transport in regard to their safety and the safety of the ship and for the maintenance of order thereon. Such orders must be obeyed immediately.

It is the duty of the transport commander to maintain pleasant relations between his troops and the members of the ship. Dissensions that are provoked by the troops he must immediately punish, but at the same time he must come to some agreement with the ship captain in regard to the measures affecting the crew. In cases of this kind, great care must be taken, and if possible an agreement must be reached on the day of the offense, and the matter thus settled definitely. If the ship captain disregards the affair, then the commandant must appeal to the War Ministry; and if the incident in question occurred on the outward journey, then he must also take up the matter with the headquarters staff in order to prevent any reoccurrence on the return journey. It is advisable for all con-

cerned that the troops keep to themselves and not have any more communication with the crew or the other passengers than may be absolutely necessary. The troops often attempt to borrow civil clothing from the crew so that they may go ashore in the ports of call. but any such lending by the crew is strictly forbidden by the ship company. In punishing such an offense, the name of the member of the crew committing the transgression must be given.

In transports of from 30 to 50 persons, the transport commander shall have the rank of at least a noncommissioned officer; up to 100 persons, that of a lieutenant; and over 200 persons, that of a captain. If officers are not attached to the transport, then medical officer may be substituted as transport commanders. By the transport on a regular steamship which is completely full, the troops must not be placed with the ordinary passengers in the first and second classes. If an exception must be made to this ruling, the decision rests with the transport commandant and he must issue the necessary certificate. The increased expenses attached to an arrangement of this kind must be fully explained by the transport commandant in his report. The transport commandant alone represents the transport in the ports of call. The transport commandant is the superior officer of all members of the transport and the officers attached thereto in so far as their grades and length of service place them under him. (Here follows a list of the disciplinary powers vested in each grade and the authority therefor.) All officers attached to the transport and the persons connected with them who have a higher grade than the transport commandant, or the upper military officials who have not an exact grade, are bound by these regulations while they are on board the transport.

If they have official functions on board the transport, they are therefore subservient to the transport commandant. The transport commandant has the right to assign these persons to duties to which they are suited and acquainted if he is in need of such assistance. They must comply with his request in this respect. Members of the transport who have been liable to a punishment before the ship has left the home port and who fall under the higher jurisdiction must be turned over to the competent judges with a report of the act. In judgments of this kind the transport commander has to limit himself to the necessary measures for the establishment of the proof. If temporary arrests are necessary, he has to attend to this matter. Those offenders who are still at liberty must be arrested in one of the ports of call. Offenders will be allowed no liberty during the voyage. However, if conditions on board, or otherwise important reasons require it, this punishment may be deferred until after the arrival in the harbor destination. This does not affect those persons who were delivered to the transport as prisoners. Noncommissioned

officers are liable to arrest and detention, and privates to imprisonment. Officers have to undergo simple arrest in their cabins *and may be enrolled for ordinary duties.* If the transport commandant does not consider this admissible, officers must be allowed two hours on deck and in the Tropics, four hours. During this time they can have no intercourse with others. The most severe confinement in the case of officers is to be placed in locked cabins. As in ordinary confinement, they may be permitted to spend a time on deck, but under the supervision of an officer. A mild arrest must take place in a room especially set apart for this purpose. The cells of the ship serve for all other underofficers and men. If there are not sufficient of these, the offender may be placed in a proper room entirely separated from the other members of the ship; that is, a guarded room shut off by means of sail cloth, and in which there is no danger of harm to his health.

After consultation with the medical officers, the transport commander decides if the room in question can be used. Cells which have no daylight must be lighted with electricity throughout the day, if it isn't a question of a severe punishment. Those offenders transferred to the transport will be kept in cells the entire time. In transferring these offenders, the transport commander must indicate how much of the sentence has been served.

The cells, so long as they are used for mild arrest or investigation, detention, or imprisonment, must be fitted up like the cabins of the rest of the men, and be supplied with a towel. All arrested persons and prisoners must be permitted two hours' freedom in the open air, and in the Tropics, four hours, but always under guard. (Here follow minor details in connection with military punishments, methods of transmitting information to the War Ministry, etc.)

(The next paragraphs deal with the instruction of the troops in regard to the plan of the steamship, where the different cabins are located, etc.)

As soon as possible after embarkation as a result of an agreement between the ship captain and the transport commandant, the following drills must be instituted and often practiced: A fire drill, which must be arranged according to the nature of the ship and with the means at hand. It shall also conform to the regulations governing the conduct on board during a fire. In small transports, this drill can be dispensed with. Distress drills, in which there must be practice in putting on the life-preservers. The closing-up drill gives practice in closing the water-tight compartments and portholes in the rooms occupied by the men.

Saving men who have fallen overboard is the duty of the crew. The ship captain is obliged by law to hold the necessary boats (properly manned) in readiness, with the exception of the light buoy,

which must be attended by a sentry of the transport, and he must see that the crew has regular practice for this purpose. The call "Man overboard" is to be repeated loudly by everyone without exception in order to notify by the quickest means possible the persons at the signal apparatus and those on the captain's deck. The measures for the prevention of accidents must be practiced at least twice a week, by day and by night. The troops must be instructed as to the procedure when the "Man overboard" call is given and in how far they may be of assistance. They must also be taught the use of the life-saving buoys.

(Then follows a list of the orders to be given by the transport commanders relative to the details of the daily life on board ship.)

The following things are strictly forbidden: Use of drinking water for washing purposes; smoking below deck; washing and drying of clothes below deck; throwing articles overboard or out the portholes; sitting on the railings or boats, lying on the awnings or stalls, climbing the shrouds; any defacing of the decks and walls of the ship through the moving or sliding of boxes, the cutting of names, etc.; throwing things into the ventilators; the substitution of cotton for toilet paper; presence in the cargo rooms or boat deck without permission; loitering on the hatches when loading is in progress; taking out the life preservers without permission or in time of danger; any injury to the same, and especially to the tapes attached to them; purchase from the crew of any articles of food or drink.

It is the business of the transport commander to see to the carrying out of all safety measures and other orders. As his assistants working under his direction, there is a commission appointed for the entire journey whose duty it is to take charge of the accommodations, etc.; an officer appointed daily from the service of the day; an underofficer appointed daily from the troop service of each company; a daily guard under an underofficer. The commission first mentioned, which is composed of officers and medical officers, has to see daily that all the rooms of the men (and sometimes also the utensils and dishes) are perfectly clean, and to make a report to the transport commander. They must see especially to the toilets and the removal of all refuse, and see to the immediate repair of any stoppage in the pipes. The officer from the daily service is the immediate superior of the underofficer of the troop service and the guard. He has to instruct these and receive their reports and attend to the transmission of such reports to the transport commandant. At least once in every four hours he must go through all the rooms used by the men; in making these rounds, the underofficers from the troop service must accompany him in their districts. The underofficers from the troop service must be accessible at any time of the day or night in the rooms assigned to the company, and if they are not to be found in

the rooms, then they must remain in the immediate neighborhood. They are responsible for maintaining order in the rooms assigned to them. The guard is appointed for 24 hours. As an insignia of the guard, the weapon buckled on the side is sufficient. In cases of necessity, the sentries may be on duty with both weapons and cartridges.

The number of the sentry depends upon the size of the ship and the transport and will be established by the transport commander. Sentries are appointed to guard the funds, the cells, provision rooms, cargo rooms, cargo rooms for heavy freight (at the request of the cargo master), as lookouts on the forward deck and upon steamers especially rented (where a sentry must be always on duty), at the stern for a timely discovery of all accidents and at night for the service of the light buoys, near the toilets to see that they are kept clean, and also to see that the men wash their hands after using the toilets.

In harbor it is necessary to increase the guard in order to hold the intercourse with the people in the harbor within the limits permitted, to prevent any exchange, the buying of fruit by the men, and thievery, the escape of prisoners, and the forbidden landing of the troops. When the steamer lies directly on the dock, it is especially necessary to keep a strict guard over the prisoners and the civil prisoners committed to the transport. Change of guard shall be closely timed. The ship company may lend rubber coats to the sentries when it is necessary to have such. If there is no clergyman on board, the transport commander holds the religious services on Sundays and festival days. Target practice, gymnastics, signal practice with signal flags, and instruction in the different duties should be carefully carried out. It is also recommended to have frequent (Appells) with articles of clothing, hammocks, bedding, and other articles which come lightly to hand on the ship. In order to keep the weapons from becoming rusty, it is recommended to grease the metal parts copiously with pork fat. The men must be often instructed by the medical officers in matters pertaining to their health. By instruction in history and geography, the men will not only be stimulated but it will awake an interest in the harbors and countries en route. A voluntary instruction in English is to be undertaken, if possible, and the books furnished the men can be used as the foundation. Especial attention must be devoted to the care of the clothing, equipment, and weapons. The contents of the knapsacks must be often shaken out and sunned. Articles that have been washed must be rolled and pressed. If the troops are employed in any of the duties of the ship with the consent of the transport commandant, the ship authorities must furnish them with wooden shoes for the protection of their footwear. In coarse work of any kind, they must wear special working jumpers.

(Article 16 deals with the amusement of the men during the resting periods, the music instruments, the distribution of the library books, etc.)

All articles of value or money in the possession of the men must be turned over to the ship's purser.

(Article 18 is devoted to the measures for the safeguarding of the health of the troops, such as a frequent airing of the rooms, proper clothing, dependent on the climate, the condition of the cells, the drinking water, etc.)

The individuals are not permitted to buy fruit in foreign harbors. This must be attended to by the transport commandant. Great care must be taken that all food is thoroughly cleaned before it is given to the men. Great care must also be taken if there should be an outbreak of any intestinal or stomach troubles, scurvy, or contagious diseases. All persons on the transport who have not been successfully vaccinated within the two years immediately preceding must be vaccinated before going on the transport. The medical officers must be vaccinated before going on the transport. The medical officers must examine the men every eight days and after leaving a port of call. The transport commandant, in union with the medical officers, must take especial prophylactic measures against the outbreak of any venereal diseases.

If the transport is made on a regular steamer, the ship's doctor takes the place of the medical officers, and the medical investigation of the men only takes place in the instances above noted in order to prevent the outbreak of any diseases or to discover the presence of diseases unreported by the men.

(Section 22 deals with the debarkation of the sick, the procedure in case of death or accident. Section 24 outlines the work of the German consul in the ports of call. Section 29 deals in detail with the mail.)

All articles of equipment or clothing which have been lost en route are to be noted and brought to the attention of the headquarters staff after debarkation in the foreign harbor. All rooms on the ship which have been used by the men must be thoroughly cleaned before debarkation, and, when the medical officers recommend it, to be also disinfected.

The transport commandant must telegraphically inform the War Ministry regarding the arrival and departure of the transport in the ports of call and its arrival at the port of destination (form given); also the headquarters staff regarding the possible date of arrival of the transport; must furnish the War Ministry, and when possible also the headquarters staff, with a brief telegraphic summary of any important occurrences en route and forward a written report as soon as possible; must telegraph the War Ministry from the last port of

call regarding the condition of the insane and the nervous invalids. Every official telegram sent or received must have a written confirmation. A written report of the journey must be furnished to the War Ministry and must be accompanied by a report of the medical officers.

(Section 2 deals with the individual soldiers or marines traveling from one place to another, their equipment and papers of identification, etc. The general regulations are the same as for larger transports.)

Returning troops may be dispatched further after the necessary medical investigation. The clothing and equipment brought back must be delivered to the proper department after it has been thoroughly cleaned. The men who have no civilian clothes or not sufficient after they have been mustered out may be furnished therewith (list given). Those persons granted leave and who are not supplied with sufficient civilian clothing may be furnished with a cloak in special cases. All guns and ammunition must be delivered to the proper authorities in Spandau. All pocket ammunition given to the troops at the beginning of the journey must be packed in closed boxes before debarkation. In returning troops which are in charge of an officer or a medical officer, the knapsacks of the men must be examined on the voyage for duitable articles. All such articles must be separated from the rest of the luggage so that the customs formalities may be gone through with and the articles returned to their owners without any difficulties.

In cases of desertion, the transport commandant has to examine into all the circumstances and make a detailed note in his report. The competent German consuls are to be requested to take the necessary measures for the capture of the deserter. If there are no consular officials on hand, the civic officials must be requested to make investigations and to capture the deserter and return him to the transport. Before the transport leaves the harbor in which the desertion has taken place, the competent authorities must be informed as to the measures to be taken after his apprehension.

If he takes refuge on a German merchant vessel, he is to be taken on the ship if the captain thereof has no objection, and he must then be returned to the transport. If the captain does not consent to such arrest, then an appeal must be made to the civic officials through the mediation of the German consul. If the deserter takes refuge on a foreign ship, then his apprehension is in the hands of the German consul and the civic authorities. If he takes refuge on a foreign battleship, the commander of the ship or his representative must be requested to return the deserter, and the necessary expressions of reciprocity must be given. If the extradition on the grounds of desertion is not permissible and the person in question has been

guilty of some other punishable offense, it must be determined whether the offense is a capital crime, or a simple offense, or desertion. Only in the most serious cases is the War Ministry to be requested to bring about the extradition. If it is necessary to offer a reward for his apprehension, the amount customary in the vicinity may be offered. If the deserter is a marine and has not been retaken within 14 days, he must be referred to the land division to which he was attached before coming on board the transport.

BRITISH NAVY ESTIMATES, 1921-22. STATEMENT OF THE FIRST LORD OF THE ADMIRALTY EXPLANATORY OF THE NAVY ESTIMATES, 1921-22.

Source: Reliable. (14277.) **12 March, 1921.**

Cooperation with the Dominions.

The imperial conference which is to take place in June of this year will give a welcome opportunity for discussing fully with the dominion representatives the problem of naval policy in relation to the Empire as a whole, and for the consideration of suggestions for mutual cooperation.

The lines on which it would be proposed to proceed are toward the development of dominion navies under the administrative and executive command of their own officers, each separate navy being the responsibility of its own Government, and imbued with the particular characteristics and spirit of its own people, all, however, working in close cooperation and under the guidance of a common doctrine. If war occurred in which the Empire as a whole took part, then the various component navies would work in harmony with the general strategical policy previously decided upon. To insure such intelligent cooperation, common principles of command and staff work are required. This can only be developed by a uniform system of staff training. It is proposed to make gradual progress in this direction by the appointment of dominion officers to the naval staff at the Admiralty and by arranging for a certain proportion of dominion officers each year to undergo the naval staff course at the staff college. Finally, it is hoped to arrive at a position where the dominions themselves will be able to set up their own staff colleges, working on the same lines and under the same system as the naval staff college at home.

The machinery required to give effect to these tentative proposals regarding imperial naval policy and to insure the building up of navies with a common doctrine and working to a common plan can not be indicated until this matter has been considered in conjunction with the dominion representatives and their views have been fully stated.

Staff Training and Organization.

The system of staff training and organization outlined in the Notes on Naval Policy, 1920–21, has been proceeded with, and the naval staff at the Admiralty has now been reduced to the dimensions which were anticipated, namely, eight divisions, with a total personnel of 86. This, in the opinion of the Admiralty, represents the limit of reduction consistent with economy and efficiency. The strengthening of that side of the naval staff under the assistant chief of naval staff which deals with the use and development of weapons and the requirements of design, and which was the main feature of the staff changes introduced last year, has enabled the technical lessons of the war to be exhaustively examined and applied, especially in the direction of improving design.

The first course for training naval staff officers was completed in June, 1920. Sixteen officers qualified, and are now employed on staff duties. Thirty-one officers are at present undergoing staff training at the Royal Naval College, Greenwich, this number representing the limit of accommodation at that establishment.

Effort is being made to arrange that the Naval Staff College shall be in touch with the Military Staff College in order that the naval and army officers under training may interchange ideas, and, to a certain extent, be trained under a common system, so that each will understand the requirements of the other service. In seeking to improve the cooperation of the services in defense matters, it is clearly of importance to have in the services a body of staff officers who will bring to bear on all higher strategical questions the knowledge and understanding of each others' requirements which are gained by personal association.

The courses for senior officers referred to last year have proved of considerable value. Two of these courses are held annually at the Royal Naval College, Greenwich, and it is hoped that all captains will have an opportunity of attending soon after their promotion.

In addition to the Greenwich course, technical courses are held at Portsmouth for these officers with the object of supplying them, before they assume command afloat, with the latest information as to the development and employment of weapons and communications.

PERSONNEL.

Reduction of the Officers' Lists.

The special facilities for retirement which were introduced last year with the object of reducing the surplus of officers resulting from the expansion necessitated by the war have, on the whole, been attended with satisfactory results, upward of 1,100 officers having taken advantage of the terms offered, but the numbers borne now are still considerably greater than actual requirements.

On the other hand, there is in some branches an actual shortage, mainly of schoolmasters, instructor, dental, and especially medical

officers. This is to be attributed to the reduction in the supply of qualified candidates owing to the war and to the increased rates of pay obtainable in civil life. Careful consideration is being given to such measures as can be adopted in existing circumstances to remedy this state of affairs.

Specialist Officers.

There has unfortunately been some falling off in the number of officers volunteering to specialize in certain subjects, mainly in gunnery. This is a matter seriously affecting the efficiency of the fleet and is, no doubt, to be attributed chiefly to the reduction in the rates of allowances granted to qualified officers which accompanied the new rates of pay introduced in 1919.

Temporary arrangements have been made to mitigate the effects of this shortage by utilizing the services of less highly qualified officers, but this can only be regarded as a palliative, and further measures will be necessary if the gunnery efficiency of the fleet is to be maintained at a high standard. This matter is engaging serious attention.

The Navy has become now such a specialist service that a very much larger proportion of officers are required to specialize than formerly; in fact, it is estimated that 70 per cent of the cadets entering must take up one or other of the subjects in order to provide sufficient numbers.

University Training of Officers.

The arrangements mentioned last year for the instruction at Cambridge University of the young officers whose normal training was interrupted by the war are proceeding satisfactorily, and the cordial thanks of the Admiralty are due to the university authorities for their generous support in rendering the scheme a success. The university authorities are giving every assistance, but, owing to the other demands on the resources of the university in the matter of accommodation, the training of the large number of officers still affected will not be completed before 1923.

Deck and Engineer Officers.

The steps taken with regard to the deck and engineer officers have been in continuation of the policy set out in full in the Notes on the Estimates, 1920–21.

During the past year the measures necessary to insure the efficiency of the engineering branch of the service, whilst adhering to the principles of common entry and early separation, have been under close consideration, and as a consequence it is proposed to introduce certain modifications in the present system of engineering training.

Firstly, in the opinion of the Board of Admiralty, the time has arrived for arranging gradually to transfer the duties in connection with the electrical installations of His Majesty's ships from the charge of the torpedo lieutenant, a deck officer with whom it is vested at present, to the engineering side. The maintenance in an efficient

condition of electrical machinery is a similar function to that of the maintenance of other machinery on board ships; it is not the province of the deck officer, who is concerned with the handling of ships, the employment of weapons, and the strategical and tactical problems of war.

The proposals, therefore, for the future training of officers for the engineering branch make provision for a proportion of those officers to become electrical engineering specialists.

Secondly, it has been deemed desirable to arrange for separation between deck and engineering branches to take place earlier than has hitherto been the case. The period of common training at Dartmouth College and in the training battleship will, it is considered, have been sufficient to give the cadets a general education similar to that received at a public school, and in addition a common understanding of the ideals and discipline of the naval service, after which it is now proposed that the two branches shall diverge. Those on the deck side require immediate sea experience; those on the engineering side, on the other hand, require, before proceeding to sea, to receive a thorough grounding in engineering and electricity, and to undergo a period of practical work in the workshops. For this purpose they will first proceed for three years' training at the engineering college at Keyham, and will undergo a course similar to the one which all engineer officers in His Majesty's Navy formerly underwent, and which gave us the splendid body of officers to whom we owe the engineering efficiency of the fleet during the War.

On completion of this course they will then proceed to sea to carry out engineering duties afloat. Specially selected officers will be given the appropriate advanced courses at Greenwich and as may be necessary. Those officers who have qualified in the advanced marine engineering course will be eligible, as at present, for the higher posts; those who have qualified in the advanced electrical course will be employed in ships requiring them and will be eligible for selection for the higher electrical positions. As specialist electrical officers become available the electrical installations in the more important ships now in charge of torpedo lieutenants will be transferred to them, and in the less important ships the electrical installations will be in charge of an engineer officer.

Training of Cadets and Junior Officers.

The Royal Naval College at Osborne will be closed in April, and the training of the cadets entered under the common entry scheme described last year will thereafter be concentrated at Dartmouth. This will, of course, effect a considerable economy.

The reduced numbers of cadets in the terms now to be dealt with will make it possible to concentrate the seagoing training of all cadets, including the special entry cadets and paymaster cadets, in one vessel next term. H. M. S. *Thunderer* has been selected for this

duty and will commission in May, and the present training ships *Temeraire* and *Carnarvon* will be paid off.

The question of the further training of the junior officers who are now completing their period at sea as midshipmen under peace conditions has also been engaging careful attention.

Prior to the war the courses on shore for such officers were limited to about three months, but experience has shown that an extension of the courses is necessary.

It is therefore under consideration to allow the officers to undergo a course of general and theoretical instruction at the Royal Naval College at Greenwich, and to increase the length of the courses in professional subjects in the light of recent developments.

Air Training of Officers.

Arrangements have been made with the air ministry for the training of a number of naval officers as observers for duty with the fleet. These officers will receive a general training in air work and will be available for duty in the fleet in the aircraft carriers.

GENERAL.

Promotion from the Lower Deck.

The scheme announced in the notes on naval policy last year, which had for its object the reduction in the ages of candidates for promotion from the lower deck, thereby enabling them to reach the rank of lieutenant at an age more nearly approximating to that of officers entered through the regular channels, is now in operation, but sufficient time has not yet elapsed to enable the full result of the changes to be estimated.

It is hoped that the facilities offered will be taken advantage of by the most capable of our young seamen, and that, as in the past, an appreciable number of officers will be obtained from this source.

Engineer Officers—Entry from Boy Artificers.

It is the intention that in addition to the cadets selected for engineering from the Dartmouth training establishment, specially selected lads from the boy artificer training establishment who have specially distinguished themselves during their course of training should proceed with those of the Dartmouth cadets, who take the engineering side of the profession to the Keyham College. Thenceforward such boy artificers will work side by side with the Dartmouth cadets, passing through the Keyham establishment, thence to sea, and, if selected, to Greenwich for the higher courses. It will be possible for these boys on their merits to reach the higher ranks in H. M. service

Marriage Allowance.

Marriage allowance has been introduced during the last year for ratings in the service. This was carried out on the recommendation of an interdepartmental committee—Admiralty War Office and Air Council—and is the same for the men of all three services.

Uniform.

During the last year the so-called "fore and aft" rig has been introduced for petty officers of over four years' seniority.

Reserves.

Royal Naval Reserve and Volunteer Reserve.

The recommendations of a committee appointed in March, 1920, to consider alterations necessary in the arrangements then existing for enrolling, training, and employing officers and men of the permanent Royal Naval Reserve and Royal Naval Volunteer Forces, and to frame the organization necessary to permit of the rapid expansion of these forces on the outbreak of war, have now received the approval of the Board of Admiralty and the sanction of the treasury, and the new regulations consequent on the adoption of these recommendations are being issued and brought into force.

Courses in gunnery, torpedo, and signals for the Royal Naval Reserve were in force under the old regulations, and the scheme of training has been extended to include special courses in navigation, submarine, patrol, mine sweeping, mine laying, and antisubmarine services, the intention being to provide a reserve of seafaring officers and men trained in the branches of naval warfare in which the experience of the late war has shown that their services would be required in any future hostilities.

With a view to providing to some extent for the necessary expansion of the engineering branch in the event of war or emergency, a special reserve of engineer officers has been formed from the temporary engineer officers, Royal Navy, who served in the fleet during the war. These officers will be required to undergo 14 days' training each year, or 28 days every two years, and may volunteer for 12 months' temporary service in the fleet.

A similar extension of the scheme of training for the Royal Naval Volunteer Reserve has been made in order that this force may, in like manner, be better equipped for the duties on which it would be employed in war time.

The Total Numbers Authorized for the Financial Year 1921–22 are:

Royal Naval Reserve:	
Officers	2,029
Men	9,000
Royal Naval Volunteer Reserve:	
Officers	484
Men	5,000

Recruiting to complete to these numbers of Royal Naval Reserve men is in active progress.

No deck officers and only a small number of engineers and accountant officers are required to complete the number of Royal Naval Reserve officers authorized, and midshipmen are being entered to provide for wastage in the future.

In connection with the reorganization of the Royal Naval Volunteer Reserve, drill batteries are being rearmed, and drill ships are being fitted out for certain divisions which require them. Revised establishments of training equipment and stores have been prepared and supply is now being made. Preparation for recruiting at an early date is well advanced and a nucleus of the instructional staff has been appointed to all divisions. Arrangements for clothing and kitting up of the men are in hand.

A summary of the new conditions of service in the Royal Naval Reserve and Royal Naval Volunteer Reserve was given to the house in the statement of the parliamentary secretary of the Admiralty on 14 December, 1920.

Scientific Research.

The erection of the Naval Research Institution at Teddington in close proximity to the National Physical Laboratory is now well forward, and it is hoped it will be complete by the end of the present financial year. As regards Shandon, scientific work there has ceased and the transfer of stores to Teddington is proceeding.

It is intended that facilities for actual sea experimental work shall be supplied by the existing experimental establishments. The staff of the scientific department at the Admiralty will, when research has reached a suitable stage of development, be able to continue the work at sea from one of these experimental establishments in cooperation with the staff at that establishment. In addition, a certain number of the scientific staff of the Admiralty department will work entirely with, and side by side with, the staff of the naval establishments. No hard and fast line can be drawn between research and development, and this arrangement will allow of those who are primarily concerned with research being in close contact with those who are primarily concerned with development.

The researches now in hand are more numerous than they were at the beginning of the financial year, and the technical departments of the Admiralty are working in close cooperation to secure the full advantage of these researches.

It may not be out of place to make some reference to the very economical arrangements which have been made in regard to optical research and experiment. It was arranged earlier in the year that the requirements of the fighting services could best be met by cooperation, and it has been decided that the Admiralty shall maintain an optical section at the Naval Research Institution which shall carry out research and experiment for both the navy and army. Until the Admiralty building at Teddington is complete, arrangements have been made for the optical section to be housed by the National Physical Laboratory. In a somewhat similar way it has been possible to centralize research work in gyroscopes, it having

been decided to continue such research work at the Royal Naval College, Greenwich.

Matériel.

The Admiralty are fully alive to the necessity of keeping pace with the development of other types of vessels and other weapons which become an increasing menace to the capital ship, and in the design of the new ships it is necessary to improve their offensive and defensive powers against such new dangers as they may have to meet.

Gunnery and Torpedo.

The development of gunnery and torpedo has proceeded along well-defined lines, and satisfactory progress has been made in the fleets in continuing the investigation of the many problems awaiting solution in the use of armaments of the various types of vessels and in training the personnel in those methods.

Valuable lessons have been learned from experimental firings. During the present year it is the intention to fire at an obsolete battleship converted for use as a moving target. It is anticipated that the use of this vessel will greatly facilitate the solution of gunnery problems, in addition to providing most valuable instruction to the personnel of the fleet.

Antisubmarine Work.

The importance of research in connection with the antisubmarine devices has been kept continuously in view, as progress in this direction must have a profound effect in regard to requirements of design and types of vessels in the future. The antisubmarine school has been set up in the existing buildings at Portland, and already there is considerable promise for the future in certain detection devices under trial. Three vessels attached to the school at Portland are specially fitted for the practical experiments which are being pursued, the officers carrying out theses trials being in close touch with the scientific establishments concerned, thus insuring that theoretical and practical requirements receive due weight.

Commercial Application of Scientific Devices.

A division of the naval staff has been made responsible for keeping in view and formulating proposals for the commercial application of scientific devices, originally developed for naval purposes, which may be suitable for commercial application.

One of these—leader gear—is a device for leading ships into harbor when, as in fogs, ordinary navigational aids can not be used. The Admiralty propose to lay out a leader cable in a position where its commercial application can be fully demonstrated in order that the mercantile marine may have every opportunity of investigating the practical commercial value of the device. It is believed that the adoption of leader gear off the entrances to some of our commercial ports will prevent considerable losses both of time and material.

Directional Wireless Telegraphy.

Directional wireless telegraphy was developed during the war for the purpose of giving H. M. ships their position at sea. Many stations were set up on the coasts of the United Kingdom, and several of these since the armistice have been placed at the disposal of ships of the mercantile marine to enable them to obtain bearings, a small charge being made in each case.

Considerable use has been made of the system, but as the stations are not required in peace time for naval work they are being turned over to the post office, with the exception of one, which will be employed on development and research work.

Naval Air Development.

During the year the naval staff has been in close cooperation with the air staff both in matters of development and the tactical use of aircraft for naval purposes.

The information gained from exercises and experiments has been fully interchanged, and specifications for improved designs of aircraft have been laid down.

The composition of the air units required for fleet cooperation has been determined, and it is hoped that during this financial year the air equipment of our fleets with heavier-than-air craft will make a big stride.

The provision of airships for the navy has had to be suspended. The Air Ministry informed the Admiralty that the economies imposed upon them in the preparation of the air estimates would compel them to reduce considerably the provision of heavier-than-air craft unless the airship service was suspended. The Admiralty considered that any such reduction in the vital naval requirements in heavier-than-air craft, which are essential to naval efficiency, and to which naval votes are heavily committed in the provision of aircraft carriers, could not be accepted.

While the Admiralty regret the decision of the Air Ministry to suspend the airship service, they realize that in view of the stringent financial restrictions no other decision could have been arrived at.

The limited funds now available to meet naval air requirements will, therefore, be expended on heavier-than-air craft instead of on airships.

In view of the importance of training Royal Air Force personnel in naval work, arrangements have been made to put an aircraft carrier at the disposal of the Air Ministry for certain periods for this purpose.

Dockyards.

At the present time 56,000 men are employed in H. M. dockyards. Of these 51,000 are employed on purely naval work (including 5,000 specially entered as a temporary measure in accordance with the

policy of "short-time") and 5,000 are employed on repayment work largely as a result of the action taken on the report of the committee over which Lord Colwyn presided.

The money shown in vote 8, section 1, for the new financial year will admit of the continuous employment of only 43,000 "full-time" men on naval work. As regards work on which "short-time" labor can economically be employed, this is fast coming to an end, and the gradual discharge of the surplus men specially taken on can not therefore be avoided.

As regards the 5,000 men employed on repayment work, it is hoped that a large amount of such work will continue throughout the year, but discharges must be effected as the repayment work is completed.

As pointed out in the First Lord's covering statement in introducing the estimates for 1920–21, the number of home dockyards exceeded the prewar number by one. With the reduction of the fleet contemplated in the estimates for 1921–22, the number of dockyards (7) is now in excess of naval requirements. This matter has been given most careful consideration, and the Admiralty propose gradually to reduce and eventually to close Haulbowline and Pembroke. Every effort will be made to distribute the established men among the other yards. The men who become redundant by the closing of these yards are included in the numbers of discharges indicated in the preceding paragraphs. It is expected to complete the closing of Haulbowline during the financial year 1921–22, and of Pembroke in 1922–23. No further naval work will be taken in hand at either of these yards, but the repayment work now in hand at Pembroke will be completed at that yard.

In connection with the discharges from the yards which will be necessary during the coming financial year, opportunity will be taken to readjust the numbers employed in the various trades, which have got very much out of proportion during the war and reconstruction periods.

EFFECT OF THE ENGLISH CONDUCT OF THE WAR. (By ADMIRAL VON SCHEER.)

(14089.)

14 January, 1921.

Even before the year 1914 the opinion was held by a large number of people that the international trade relations were so interwoven that a war was inevitable. In one respect the frightfulness of the results of such a destruction of industrial life was not foreseen. England believed, even during the War, in the "Business as usual" policy, and took this favorable opportunity by allying herself with the two strongest military nations of Europe to cause the downfall of

Germany. Indescribable suffering has broken out over the greatest part of Europe, caused by the English hunger blockade, which was continued for nine months against a defenseless nation, who had laid down their arms and surrendered their ships. The noose about our neck was not released until the unheard-of requirements of the treaty at Versailles had been enforced. In taking away the German merchant marine, the English object of the war was disclosed. The control of the English domination of world trade was to be satisfied, in spite of the fact that the latter had grown to tremendous proportions and that the English share in this trade had not been damaged. But the German merchant marine, whose size was only one-fourth of that of the British, stood next to the English in their possibilities, and, therefore, the further development of this merchant marine could not be tolerated, according to the English ideas.

The mission of the English War Fleet was the strangulation of German trade, as Churchill showed in his speech of the 9th of November, 1914, and British naval strategy was based on this principle.

The English historian of the war, Corbett, strove to justify this procedure in the eyes of his own people and the whole world in that he claims this to be the only possible course for England to pursue as a defensive measure. No wonder. The Briton is accustomed to regard the deeds of his sea heroes with pride. Then Corbett writes: "The success of the defense over the attack went beyond everything the most sanguine and foresighted among us had dared to hope, and beyond anything we had achieved before."

No less than Lord Fisher, first sea lord of the English Admiralty, arrived at quite another point of view, as shown by his "memoirs," published in 1919. He saw the mission of the English Fleet in the following three main points:

First, the safeguarding of the lanes of travel through the ocean; then clearing the North Sea; and, finally, the main point was to obtain access to the Baltic. To accomplish this, the German Fleet in the North Sea must be defeated. In that case, the landing of the Russians on our Baltic coast, under the protection of the Russian-English Fleet, would be feasible, and our eastern front would have been in danger. The British Admiralty could not decide upon this course, as they feared the possible danger to their own fleet. They chose, instead, to hold their fleet in their bases in the far north, even to the westward of the British Isles, and avoided battle. The effect of this strategic location could only make itself felt in case the bordering nations in the blockaded districts could be drawn into the English plan and in case the War lasted long enough to achieve the desired strangulation (of Germany). From this point of view, it may be stated that the longer the War lasted, the more secure

would be the British mercantile supremacy and the greater damage would result to the German colonial possessions.

The support of the allied military operations by the British Fleet, according to Lord Fisher's plans, did not take place, because England thought only of her own advantages and the preservation of her overpowering sea power, even though Russia was to be sacrificed.

Aside from the moral side of this question, which shows the cold-blooded selfishness of the English in a clear light, this explains the great care taken by the British to avoid losses to their powerful fleet.

Countries against which England can not apply this strangulation method, or against whom it is not a practicable means, will appreciate what this far-sighted holdback of the English Fleet in the World War had for a reason.

The English mercantile war rested on the old right of nations as to the confiscation of private property at sea, so that the destruction of enemy trade and the confiscation of their merchant marine served them as the main object of the War. The manner in which this was carried out in this War exceeded all previous wars in the measure of their disregard of the rights of neutrals. From this viewpoint the English never restrained themselves in grasping for everything possible, as Mahan in his famous book on the "Influence of Sea Power on History" has shown: "The possession of an unrestricted power, such as the sea power of England in 1758 actually was, seldom results in a deep respect for the rights of others."

Even though in the middle of the last century efforts were being made to have private property at sea protected from the attack of warships, a standpoint strongly supported by the United States of America, and in which the peace declaration of 1856 did not go far enough, it was still resisted, even up to the present time, by England. Even though she herself possessed the greatest merchant marine, and felt that it was well protected by its overwhelming fleet, she still used this as the main means of letting an opponent feel her might, and would not give up the confiscation of enemy merchant ships. For example, Holland was prevented in exporting her own products to Germany and was notified to institute a stringent export prohibition in order to avoid danger that England would close off her trade by sea. The whole sea trade of all nations lay under English control. Countries such as China, Brazil, and others, who had not the slightest interest in the defeat of Germany, were forced by pressure from England to join this world coalition, which resulted in our final defeat.

It is not a glorious page in the history of a nation to have taken part in this conquering of an individual nation, only because its inhabitants, through zeal and industry, attempted to come to the front

through peaceful development and obtain their share of the world's trade without leaving it all to the greed of England.

The sharp note of President Wilson on the 5th of November, 1915, against the English confiscations at sea, and the further notice of Secretary of State Lansing on 18 January, 1916, containing its severe warnings, received no consideration from England and were not enforced by the United States.

It is much to be regretted that the means for spreading propaganda in neutral countries, and particularly in America, failed to explain our position as it actually was and to counteract the English lies about our conduct of war. The nonpartisan position taken by President Roosevelt in the opening pages of his book on "The War between the United States and England in 1812" states as follows: "It is often difficult to conceive clearly that in a conflict between two nations not only each party feels himself to be in the right, but that each side, from his own standpoint, is actually in the right. A sound and living nation must follow the law of self-preservation. If a nation is in a life and death struggle with an enemy country, it can not be held strictly accountable for the damage which is sometimes inflicted on the neutral states."

What England did in the early phases of the war, without the excuse of necessity, was called a crime for us, as we were engaged in a battle such as no nation had ever indulged in before, following the law of self-preservation. The English mercantile war was what called the submarine campaign into life. Regarding the right of such application, volumes have been written. One may think what they will, or how they will; the force of necessity gave us the moral right. Now, after the war, the voices of the opposing parties are raised, those which before the war could not do enough to put the submarine in a position of a much-to-be-shunned weapon, now quite otherwise. The Royal United Service Institution, the leading military institute of England, has given a prize to C. M. Faure, R. N., for an article entitled "The influence of the submarine in future warfare," which reaches the conclusion that the submarine is a necessary weapon and that its use in a commercial war, without previous warning against merchant ships, is completely justified.

In the same manner writes the Revue Maritime: "It is entirely wrong, as was believed in the beginning, that it is necessary to warn an enemy ship before torpedoing. * * * The application of the submarine weapon as a decisive factor was in this manner correct."

England had the choice in the World War to play a defensive rôle and carry their war into the industrial provinces, or to use its fleet in the active support of the Allies by defeating our fleet. They chose the first method, which Corbett has praised as being so successful, and which, as the starvation of Germany has shown, they were in

the right. Only those who are associated with them should not be speaking words about Christianity and humanity. But the result, as has been expressed from over there, hung by a silk thread, and only a hair's breadth separated them from destruction, according to Churchill. If one imagines that the defeat of the Marne had not taken place (which might have been avoided by the correct carrying out of the military plans), then the support of the English Army at this period of the war would not have served to save the French. What tremendous forces would then have been free in the course of the year 1915 for a great offensive against the Russians. An early peace with Russia would then have been well possible. The tremendous production of munitions and war material which would have resulted from this would have stood us in good stead in our construction of our submarine flotilla. The sparing of human material which we used up in the battles of the west front and the rich importation from eastern Europe which would have been called forth by the English blockade would have served to considerably reduce the distress and raise the spirits of the nation which is now sunk into the depths. After the collapse of the Russian military, it would have been too late for the English Fleet to attempt to invade the Baltic. If England then desired to carry on the war alone, our submarine warfare would certainly have had great results, because then our political leaders would not have hesitated to authorize unrestricted warfare by submarines. The delay of this robbed our submarines of their success. In this case the plan of the English defensive would have been a mistake.

Germany was in a position for its military successes on land to carry the war to a successful conclusion, and the English Fleet would then have either been forced to seek a decisive battle or to withdraw from participation in the war.

On account of the submersibility of the ship, naval warfare has reached a new and highly important moment. The old conditions will never return, even as the control of the air by means of airships and aeroplanes have brought new conditions.

The English Admiralty themselves had assisted in the development of the submarine, and in doing so had themselves undermined the overwhelming position of their fleet. There is no doubt but that the final development of submarine warfare stands at the beginning of its development. While for surface ships the limit of their possibility has been reached. They have already reached extraordinary dimensions, but in doing so they have not rendered themselves less vulnerable, and they are objects of such great value that, as has been shown by the English strategy, they are more to be protected than to be used. And so this method of frightening other powers by forcing them to follow in the dreadnaught construction has turned against its own originators.

The luxury of these giant ships could only be afforded by a few nations, and England could always manage to keep ahead of these few in numbers. All other lesser sea powers sank into nonimportance and the British control of the seas seemed secure.

The submarine upset all of these calculations. The fear of the English Fleet as a war arm is giving way. On the contrary, vulnerability of the island nation by merchant and import damage is becoming more apparent. Now the last opponent of the sanctity of private property at sea, England, is beginning to come to another conclusion as their weakness becomes all the more apparent.

At the opening of the War the chief care of England was to stave off a panic over the danger to the import of living necessities. What tremendous efforts must have been made to protect the lanes of travel from the raids of the light cruisers *Dresden* and *Karlsruh* in the Atlantic and the *Emden* in the Indian Ocean. Corbett's book on the naval war shows this as a decisive factor. How much more difficult would have been the position of England for the imports to the island Kingdom if an enemy in the Atlantic Ocean had at their disposal 20 or more submersible cruisers of equal or greater speed than our small cruisers possessed? They would have been free to withdraw from enemy contact by diving, and the tremendous difficulties of refueling, under which our cruisers had to suffer, would be absent, for in the great radius of action lay the main strength of our submarines. This advantage depends, however, on the fact that a submarine can be enabled to cruise at economical speed, is not forced to seek salvation in flight at high speed from overwhelming forces, because they simply dive and disappear. Particularly favorable would be the position of a country engaged in naval warfare against England, which had outlying points of support in favorably located islands, which were lacking to us.

Also the disadvantages in the submarine are known, principally their low speed. When one thinks of the small number of submarines we had at the opening of the war, about two dozen, and that the building of our flotilla during the war had to be, to some extent, improvised, with very small time for improvements, requiring long research, then the real achievements become still more memorable. It was necessary above all to increase their number and to reduce the time of construction. For this reason, in the hopes of being able to count on a quick ending of the war, a large number of small boats were built.

On account of the radius of action, these were chosen for operation in the coasting waters of the British Isles. At this point, however, the antisubmarine operations were most potent and made the operations of our boats much more difficult. It was only toward the end of the War we had boats of from 1,200 to 2,000 tons which were capable of cruises of three months' duration. Also the speed

was raised over the previous types, from 12 to 18 knots on the surface and from 7 to 9½ under water. And now we read that an English submarine has already reached the speed of 24 knots. Science will undoubtedly find ways and means for the further development of the submarine, so that they can not only be well used as destroyers of merchant marines, but also can play an important part in an action against a fleet. One has only to think of the advances made in the speed of the new steam-driven ships over the early developments. The possibilities of counteroperations become smaller as the possibilities of an attack for the submarine become greater.

One is inclined to say that the possibilities of such development of a submersible type of warship would be a Utopia. At this present time, it is not determined. I do regard as Utopian, however, that proposition that the strength of the fleet may be increased by a further increase in the individual displacement of the ships. I do hold it equally impossible that the present type of large battleship can be made submersible.

As carriers for long-range guns, this is only necessary for purposes of protection, because in the submerged condition the submarines must always fall back on her main weapon. It is easily possible, however, to bring the submarine cruiser up to such large dimensions that the personnel and living conditions are much improved, with the equal improvement of the possibilities of serving the guns, without at the same time losing its character as a submersible, and, therefore, with a torpedo as its main weapon. How is the possibility of such a development of naval construction to be estimated? This can only be indicated in outline. With the final developments of the submersible warship, the value of the surface craft will fall. The present-day conception of control of the seas will lose its meaning, since the possession of a superior fleet in itself is not sufficient to operate against an opponent conducting mercantile warfare with submersible cruisers. Its own trade remains unprotected so long as it is not possible to destroy the submarine stronghold or to completely close them off. The World War has shown that in this respect England was not successful in spite of her great superiority over the German Fleet and her favorable geographical location in regards to our stronghold in Flanders and in the corners of the Bight of Heligoland. The battle must be carried into the coast waters, where the aggressor is at a great disadvantage, the further he is separated from his own base, and the more numerous the submarine harbors.

On the high seas operations against the fast submersible cruisers can not become dangerous. The difficulties of taking a large fleet over wide stretches of ocean to an enemy coast and the safeguarding of the transport of munitions and fuel, as well as safeguarding the repair possibilities, are so great that such an expedition against a prepared opponent is practically impossible.

In a fleet battle the fast submarines are enabled to take the place of the torpedo boats, and, unopposed, make an attack on the fleet. This, together with the uncertainty of the moment of attack, will have a decisive influence on the gunnery duel being carried on by the ships of the line as well as upon the tactics.

The most important mission of a large fleet, the protection of their own trade, remains impossible to carry out. Every sea power which is in a position to protect its own coast in a measure can throw themselves with submersible boats into this mercantile warfare without being forced to a battle for the control of the seas, and can, therefore, develop their fleet in composition and strength along these lines.

The result of the war will then depend upon which nation is more able to hold out against losses inflicted by its opponent on its overseas commerce.

This changing the methods of naval warfare brought about because the ocean can be traversed under water, as well as over water, coincides with the change in the balance of power of the previous great powers after the political influence of Europe on the rest of the world had been destroyed. To these belong, in the first place, America, England, Japan, and also France, if the ambition of this county is fulfilled, in that she obtains the control of all of old Europe.

Through the military alliance with Belgium, her ocean borders will extend from the Atlantic to the Baltic, and it will be hard to leave this favorable position on the Atlantic Ocean unused, although at the present time she is striving to obtain the possession of the most important iron and coal deposits of western Europe.

The continental interest which in the last century shaped the political laws of Europe will be overshadowed by those interests which reach out over the ocean and for whose protection the sea power is necessary. The introduction of the submersible into the battleship fleet gives a possibility for these world powers to shape an overseas policy without the necessity of striving for a surface fleet to "Rule the waves."

As for the possibility and practicability for a League of Nations for equalizing these inequalities, the greatest doubt is to be entertained.

In the concert of powers, England will not have the exceptional position which, as leading sea power of the world, was her right, and the reorganization of the battle weapons will result in a new valuation, thanks to the English methods of conducting war Then the rights of all nations on the seas will have a new meaning as influenced by all nations having a part in the sea trade, and the freedom of the sea—when not dictated by England alone—will become a reality. The German Fleet as champion of these world rights will not have fought in vain, even though it was destroyed in the process.

RUSSIAN CONDITIONS.

Source: Reliable.

General Conditions Resulting from Revolution.

1. In the early stage of Russian revolution all the old machinery of the Imperial Government was destroyed, and there was no central authority which could make itself felt outside of a few large towns. In the small towns and agricultural districts, local administration fell into hands of petty officials informally selected, or in many cases themselves assuming authority backed by small groups of armed men. All prisoners were released, and those that did not remain in the towns drifted back to their native villages and in a considerable measure took charge of affairs there. The peasants themselves seized the lands of the proprietors, divided them up according to a rude system of distribution, and in a large number of cases killed or drove away the proprietors and their agents, and destroyed all modern improvements on their lands. The peasants in the beginning bothered themselves very little about political matters or about who was in control of the Government. They possessed the land, had plenty of money (mostly worthless) hoarded away, paid no taxes, had no police or tyrannous petty officials, grew plenty of food to supply themselves, and perhaps considered themselves quite fortunate people.

Conditions After Bolsheviks Assumed Power.

2. On accomplishment of the Bolshevik coup d'etat in November, 1917, the status of the peasants at first was not at all affected. The cities were short of food, and attempts to collect grain from the country met with some opposition, but the Bolshevik Government devoted its principal to consolidation of its power in the large cities and to control of means of communication and bothered the peasants very little.

For almost a year of the Bolshevik Government the peasants were little disturbed, and from a narrow and selfish point of view their position was quite satisfactory. In southern Russia conditions were somewhat different, since southern Russia as far as Rostov was occupied by German forces, which, however, behaved usually in an exemplary manner, and from the point of view of the small towns even gained the good will of that portion of the population. However, the Germans also badly needed bread, and took it where they could find it by requisition, and so created opposition amongst the peasants, who organized themselves in small bands, and, where they were able, resisted the German grain collectors. However, in their administration of occupied portions of Russia, the Germans established law and order and were very considerate toward the local administrations, rarely interfering with them in any way. Under

these conditions, during 1918, the peasant movement did not attain any considerable dimensions.

3. When the armistice went into effect, and German troops were withdrawn, the Bolsheviks began to extend their influence and to assert their power in small villages. This was done with little system or consideration, the commissars in most cases being chosen for loyalty to Bolshevism rather than for ability, *many of them being young Jews.* Requisition of grain began in a more stringent form, and drastic measures were employed toward any that resisted or failed to supply their quota. The sympathies of the peasants, which had been rather favorable toward Bolshevism, began to be estranged.

4. Also, toward the end of 1918, organized opposition to the Bolshevik Government began under various ex-imperial leaders; large numbers of soldiers became necessary to the Bolshevik Government, and these were obtained by conscription of the young peasants, who responded very unwillingly. Dissatisfaction grew amongst the peasants, armed insurrections were frequent, but, being usually isolated and without communications or mutual support, were mercilessly suppressed by punitive expeditions composed usually of Letts, Chinese, and sailors.

A revolting village would murder its commissar, assemble its forces, and perhaps even defeat small punitive expeditions. Finally a sufficiently strong detachment, with artillery, would arrive, the village would be surrounded, artillery fire opened, the village destroyed, and all its inhabitants butchered. This sort of thing was quite common in the winter of 1918 and spring of 1919. These methods, though effective from a military point of view, nevertheless developed a feeling of hatred amongst the peasants toward the Bolshevik Government, and some of the peasant bands remained in existance and carried on guerrilla operations against the Reds. This they were able to do on account of the large areas in Russia without railway communications, and in cases where the leaders were especially capable, or able to win the sumpathy or confidence of the populations in vicinity of their operations. In the summer of 1919 the peasants, particularly in southern Russia, were extremely antagonistic to the Reds, and with any sort of sympathetic or considerate treatment would have given entire support to any movement tending to do away with Bolsheviks and their Government. However, in this, the Denikine movement signally failed. Although accompanied by profuse promises and liberal declarations, the conduct of the Denikine forces were hailed as deliverers, and within a month became hated as oppressors, even more than the Bolsheviks, who at least made the pretense of acting in the name of the people, and actually observed some of the forms. Denikine promised the "land to those working it," but his troops were used to reestablish

landed proprietors and assist in forcible collection of their rents. When through faulty military dispositions Denikine's forces were compelled to retreat, they did so through a hostile country, and lost more than they had gained. After this the peasants trusted neither side; and their armed bands operated against each with entire impartiality, and with the principal purpose of obtaining for themselves sufficient arms, ammunition, and equipment to maintain themselves. The recognized authority in southern Russia became "the man with the rifle in his hand."

5. With the collapse of the Denikine movement and beginning of the Wrangel operations, the peasant bands and their leaders found their places neither in the ranks of the Bolsheviks nor in those of the anti-Bolsheviks, and gave their trust to neither. Their organizations continued in small bands, operating actively only in those seasons of the year when the sowing and harvesting of their crops would not be interfered with. The influence of these bands never became controlling, although, simulating a popular character, the general character of the peasant movement became more in sympathy with Bolshevik than with anti-Bolshevik ideas, particularly amongst the younger men.

6. In the early part of their operations in 1918 the peasant bands quickly learned that they could not withstand the organized troops of either side. They remained in small detachments and confined their attention to paying off of personal grudges against individuals, attacks on propertied classes of small towns and rural districts, and only rarely attempted to occupy cities or even small towns, their operations usually being carried out in areas where railways were few and communications rare. Particular effort was made by them to destroy all forms and records of the former judicial administration. The favorite time for operations was the months of September and October, after the harvests had been gathered, when they would assemble at some prearranged rendezvous, each man providing his own arms and equipment, and then in bands of 100 to 1,000 carry out attacks on properties worth looting, keeping for themselves what they considered necessary and distributing the remainder amongst the poorer peasants. Attacks were particularly directed against land proprietors, Jews, clergy, German colonists, and anyone that might be considered as representing law and order. When the winter came on the bands dispersed except for a short time in the spring, while roads remained hard, just prior to melting of the snows.

7. Amongst the most prominent of the leaders developed in these operations was Nestor Makhno, a former exiled criminal. Makhno is about 43 years of age and was born in Gulai-Pole, a small village about halfway between Alexandrovsk in the Dnieper and Mariupol, on the Sea of Azov. He himself states that as a boy he committed

theft in order to obtain money for an education. Anyway, he was undoubtedly a hard character, and later becoming involved in political offenses, was exiled to Siberia, where he had been for several years prior to the general amnesty of all prisoners declared by the Bolsheviks on assuming power in November, 1917. Makhno then returned to his home town in December, 1917, and assumed leadership of a small body of peasants engaged in their usual character of operations. Having more than the usual ability, he was more successful than other leaders, and gradually gained control of all the peasant bands in vicinity of his birthplace. During the German occupation he carried on operations against them, in opposition to their system of requisition of grain, but, although he strengthened his local personal influence during 1918, he was hardly known outside of his particular district. On withdrawal of the Germans in December, 1918, the authority of Makhno became about the only authority recognized in his vicinity. He fought all attempts of the Bolsheviks to impose their authority in the area he considered his own, and at this time demonstrated considerable capacity as a leader. He won the sympathy of the peasants by his manner as well as by practical deeds in making the poorer ones sharers in his loot. He never interfered with local administrations, but expressly declared to the populations of areas occupied by him that they were to govern themselves in any way they saw fit. He never organized any administrative system or adopted any platform.

8. According to an officer who was personally acquainted with him, and who himself has served under various colors, Makhno is short, dark, and rather heavy set and saturnine. He dresses usually as a peasant, and pretends to no style whatever, bowing down from the waist like a peasant on meeting anyone, even if only a prisoner, and using "Thee" and "Thou" in peasant fashion. However, he makes decisions quickly, these usually being accompanied by violent action.

He is a man of resolution and determination, and understands thoroughly the peasant nature. He does not himself admit subordination to anyone, and even when cooperating with one side or the other accepts no direction from it. Personally, his policy seems only to insure that the district in vicinity of his birthplace shall remain subordinate to him and to him alone. If either of the other sides becomes too strong in this vicinity, he begins operations against it, usually by attacking its communications and isolated detachments. Various policies have been attributed to him, from the "beat, rob, and kill" of the Anarchist to that of "Land for the peasant, a Czar for Russia," both probably with little foundation. The only watchword that may be credibly attached to his policy is "All power to the people" (Vlast Narodu), and although this is a

watchword very common everywhere amongst the poorer classes, its applicability to Makhno is deduced more by his policy as shown by his deeds than by any actual utterance on his part.

9. In the spring of 1919 Makhno was operating, although not very actively, against the Bolsheviks. As the campaign of Denikine progressed, and it became evident to all Russians as directed by purely reactionary influences, and in character on no higher a plane than that of the Bolsheviks themselves, Makhno took up a position of active opposition to the volunteer army, and during September and October, 1919, operated actively on Denikine's communications and beyond. The weakness and stupidity of the Denikine policy was one of the principal causes of Denikine's retreat in November, 1919. Denikine was obliged to detach some of his best troops to meet Makhno, and in one pitched battle they defeated his forces, but were never able to crush them or to capture Makhno himself. With Denikine's retreat Makhno was left very much to himself, enriched by the capture of considerable quantities of arms, artillery, ammunition, and equipment. During first part of 1920 the Bolsheviks left Makhno very much to himself. They retained the principal lines of communication and, with exception of Crimea, the seaports in southern Russia. Besides, the spring and summer not being favorable time for Makhno's operations, he was little heard of.

However, in September, 1920, his bands began to assemble and were reputed to number between 20,000 and 30,000. According to published statements and Russian intelligence service, Makhno had assumed an expectant attitude, not hostile to Wrangel, but waiting to see how Wrangel's deeds corresponded with his words. At the same time, Makhno continued active against the communications of the Red troops, not so much through enmity to them, as from the necessity to acquire further military supplies. A number of Makhno's subordinate Atamans declared for Wrangel and actively cooperated with his forces, but never accepted subordination to him. Some of them, after accepting aid from Wrangel, afterward cooperated with the Reds, but others remained loyal and afforded Wrangel great aid in his first advance. Various delegations reputed to be from Makhno came to Wrangle, but Makhno himself never had any direct relations with Wrangel. However, he continued operations against Red communications until October, and then, according to soviet press, accepted terms, and carried out military tasks assigned him by Red commanders. Anyway, after first part of October, Makhno did little to aid Wrangel, and his position was considered suspicious. However, there is reason to believe that this was the result of a clever trick employed by the soviet powers. Widely announcing in their radio that Makhno was cooperating with them, information that was promptly received by Wrangel, but of which Makhno himself may

have been quite ignorant, the Reds organized partisan detachments which called themselves "Makhnovtsi" and did attack Wrangel's forces. Some of these leaders were captured and executed, and finally Wrangel's troops had a fight of some importance, about 15 October, with real "Makhnovsti" near Gulai-Pole, Makhno's home town, and after this apparently Makhno operated as much against Wrangel as against the Reds. Anyway, at this time Wrangel seemed very strong and in accordance with Makhno's usual policy of attacking that side which threatened his supremacy in his own bailiwick, he would anyway probably have attacked Wrangel. Besides, at this time it was becoming fairly evident that in spite of Wrangel's good intentions, and his well-planned liberal measures and laws could not be carried into effect due to the reactionary influences of which he could not shake himself clear.

10. In military operations, Makhno has shown originality and genius. He alone so far has known how to acquire forces which serve in reality voluntarily and which are so formidable that when more than a thousand "Makhnovtsi" are known to be assembled they are usually left severely alone by both sides. For the sort of warfare they have hitherto carried on such forces are very efficient, but they are only so within their own local areas and then only for a portion of the year, perhaps three months in all. Makhno's men are well armed and equipped and within their limitations are fairly well disciplined. Several new tactical features have been introduced by Makhno, one of the most important being adaptation of local transportation to rapid transfers of his forces from one area to another. This is accomplished by loading six to eight men on each country cart, making a full night march in this order, and at daybreak attacking with practically fresh troops. Machine guns were mounted by Makhno in the ordinary country surreys, containing crews and ammunition and rapidly shifted from one place to another, easily keeping up with cavalry marches. Makhno also initiated the idea of marching usually by night, and lying concealed in a village during the day, in this way sometimes transferring his troops as much as 100 miles before any intelligence could be obtained regarding them. All these measures were adopted by Wrangel and also by the Reds, as it was quickly realized that they were highly effective in the circumstances of the fighting in south Russia. Makhno was also careful of the lives of his men and did not undertake operations likely to cost much in loss of life. His methods and character appealed to the peasants, all of whom in his vicinity, with exception of German colonists and Mennonites, whom he has treated with great severity, are strong for him. Lately no one has ever seen him, and to both the Russian staff and to the Bolsheviks he is regarded somewhat as a myth, but nevertheless remains a powerful factor in the future fate of Russia.

11. As to Makhno's capability of taking charge of a national movement, there is very great doubt, but he will have to be reckoned with always. Without discussing the possibility of stability being reestablished in Russia through some political action of the elements now in control, there is also the possibility of this being established by a great popular movement, of which there are several instances in Russian history. Such a movement would come from the great mass of the Russian peasants after they shall have had brought home to them the evils of the present form of government and after they shall have suffered sufficiently. So far this has not occurred. Yet throughout Russia, and especially in the Ukraine, are numerous bands of determined men who have learned through bitter experience the fallacy of communistic and Bolshevik principles, and once organized could wipe out the whole soviet organization. Leaders of such bands in the Ukraine have personally stated that they both can and will do this. With them will naturally be Makhno, but that he has sufficient vision and political sagacity to organize and control such a movement is doubtful. However, of all the leaders he is now the strongest and, judging by results, the most capable. If he should be able to join with these qualifications some statesmanlike qualifications, then he might possibly be the long-looked-for leader. In any event, the redemption of Russia will come from within, and can only be hindered by too active interposition of foreign powers, who could only act with effect if they should seriously undertake the military conquest of the country.

Russia always will be a great and powerful country. It can be helped by moral and practical support, but such aid must be given with the sole aim of the good of Russia as its object.

CONDITIONS IN RUSSIA. 1921.

(14230.)

Source: Reliable. **8 March, 1921.**

The internal friction among the Bolshevist leaders that has been evident for some time could not develop during the hard fight against the external enemies. Now, however, that they have had to pass through a transition period from the war operations to the practical realization of the communist program, this inner split has manifested itself more acutely. The Soviet of the People's Commissars under Lenin and Trotsky encountered three currents of opposition: (1) The extremists of the left under Bukharin, who blamed Lenin and Trotsky for their opportunist policy and treason against the party program; (2) the Supreme Soviet of People's Economy, who were discontent with their frequent intervention—the chairman of this soviet, Rykov, had a serious dispute with Trotsky in the question

of feeding the Red armies; (3) the group of Sinoviev, who urged a sort of autonomy to the Petrograd Commune, contrary to the centralization tendencies of Lenin.

The question of the professional unions (more or less corresponding to the trade-unions, as explained in previous reports) was the next occasion for an open conflict without being its essential cause. Lenin was the first who pleaded against the professional unions, but when Trotsky later went still further, Lenin noticed the opening of a campaign of opposition and suddenly changed his front and opposed Trotsky. Bukharin just as suddenly joined Trotsky, having discovered in him a strong ally against the group of Lenin. The following combination of forces was the result: On the one side Lenin, Rykov, and Sinoviev, who rest upon the professional organizations; on the other side, Trotsky and Bukharin, supported by the Red army and communists of the left. Up to the present the group of Lenin has been able to predominate. The chief question now is whether Trotsky will, after having encountered a final defeat, surrender or not. Lenin himself can not answer this question. There are reasons to believe that the ambitious and energetic Trotsky will not yield, and it is possible that he might get the army and the navy on his side despite the fact that the program of Lenin has been almost unanimously approved at the military meetings. As a sign of the great anxiety of Lenin may be mentioned the fact that in the Kremlin many times recently an armed attack of Bukharin's partisans has been feared and military precautions have been taken and the most reliable communists have been intrusted to guard this building. Again, as an illustration of how small the number of reliable communists is, may be said that Vice Commissar of Finance Comrade Teutshaiev was placed on post armed as a guard.

The intense character of this struggle within the communist party is shown by cases of neglect of the ethics of party discipline. No means are disdained, even those very like demagogy and provocation (treacherous excitement to action with subsequent denouncing), which have been so frequently used by the Bolsheviks against their external enemies. Thus, e. g., in Petrograd a meeting of sailors was recently held. After the speech of their commander in chief, Raskolnikov, who supports Trotsky, his assistant, Kusmin, who adheres to Sinoviev, spoke. After the meeting Raskolnikov wired to Moscow complaining of the breakdown of discipline in the navy. Then Sinoviev's assistant, Evdokimov, convoked a new sailors' meeting and passed a resolution condemning Raskolnikov and communicated this resolution to Moscow. Raskolnikov in his turn wired that irresponsible persons destroy the authority of the navy command and declared that he refuses any further responsibility for the situa-

tion. As has been confirmed, this resulted in the replacing of Raskolnikov.

Several persons close to soviet circles, for instance, Maxim Gorki, foresee the triumph of the extreme group of Bukharin, resulting finally in absolute ruin. It seems, however, more probable that a compromise will be attained and the final collapse will be avoided. It is certain, however, that in face of an external danger both groups would reunite.

Leaving aside these party frictions in ruling circles and taking into consideration only the internal and foreign policy of the soviets, it is possible to make the following important observation based upon the conclusions and statements of fully competent persons attached to Bolshevik circles. In governing circles there prevails the conviction that the existence of soviet Russia among the other democratic States is not possible; likewise they recognize the internal economic breakdown, the inefficiency of the State administrative machinery, their own powerlessness to create a modern State under the present conditions, and the fact that they are retaining their power only by means of violence and terror.

The only hope of the Bolsheviks is the communist revolution in the west; that is a question of life or death for them. This explains the whole Bolshevist policy: In the interior they try to somehow maintain their power by means of terror, force, robbery, etc.; abroad they devote all their energy to the realization of the world revolution. This explains why they ravage and waste the inheritance of the previous régime with such a foolish prodigality, although this should be regarded as their only material base. Looked at from this point of view the value of the propaganda activities abroad, all trade and peace negotiations, the sending abroad of all kind of delegations, etc., becomes clear. All this is backed by the sole thought of retaining power somehow in Russia and in the meantime of causing the flame of revolution to spread through Europe and America. They consider the reconstruction of Russia possible only in cooperation with the western communists. They think it is improbable that the ruin in Europe can prove so thorough as in Russia, but that there, instead, will be preserved riches and supplies that can be used for aiding Russia.

Again, the soviets are being supported by the communist party; therefore it is interesting to examine the position of this party at the present moment. It has been known for some time that the communist party is not numerous and has almost no organic connection with the population. The number of active communists is especially small, as most of them join the party only for the sake of economic advantages and leave the party at the first opportunity. Of late such secession from the communist party has been particularly observ-

able, and ruling circles are uneasy with this condition, though they assert openly that they are weeding the alien elements from their ranks.

Particularly the workmen and sailors have left the party in great numbers, the sailors mostly joining the anarchists. They hardly increase the number of the social-revolutionaries of mencheviks, the greatest number of former communists remaining outside of any parties.

There are none who are not in communist position of authority. Every one of them necessarily occupies some responsible post, frequently quite irrespective of his capacities. A considerable proportion of the communists are quite young. One can meet communist commissars aged 16–17, in some cases even 15.

The number of honest communists is very small. Particularly those in higher circles resort most actively to robbery, speculation, and bribery. The stores of necessities of all kinds are being systematically plundered and subsequently to conceal this, burned or hidden in cellars under water, the cellars having been flooded by the broken water pipes. The mercenary spirit has developed to an unbelievable extent. Several communist leaders have thus acquired enormous properties, at the same time converting their money into real values, as gold, precious stones, etc.

The attitude of the soviets toward illicit trade and smuggling can not be passed over in silence. While some offices energetically fight this, other authorities take advantage of trade regulations by obtaining official permits for commercial transactions on scanty supplies. Thus the speculators and the Bolshevik leaders are in close touch; for instance, one of the greatest speculators in Petrograd is Sinoviev's father—Radomilski. There has thus appeared a new sort of bourgeoisie, who are in privileged relations with the ruling circles, and feel themselves safe from any public measures of prosecution. Sinoviev himself maintains a mistress, the dancer Spesivtseva, and as to comforts in their home there is nothing lacking. The communists in power loudly cry that they are bearing all difficulties of the hard time equally with other citizens. This is a lie, particularly as to food; for example, at the end of September, 1920, there arrived at Petrograd 21 carloads of foodstuffs sent to the starving children by the Norwegian Red Cross. The representative of the Norwegian Red Cross, Kroog, accompanied the shipment to control its distribution on the spot. When in Petrograd Kroog was given 20 puds of most precious food commodities and disappeared. Later the food was little by little delivered to the country seat Bessabotnoie (the summer residence of Sinoviev and his mistress, Lillina), to Smolna Institute, and to the Hotel Astoria (the residence of Sinoviev, Badaviev, etc.); the children received nothing. Recently during the visit of Trotsky to Petrograd he got, according to a special order, five hens and three

pounds of cheese, this at the moment when the famine was most acute in Petrograd. One more characteristic example of the manner in which the present authorities adopt aristocratic customs: The assistant of Trotsky, Sklianski (formerly a soldier-clerk), considers it no longer decent to use the same toilet as the rest of the personnel, and 1,700,000 robles were assigned for the purpose of building a separate toilet for him.

The interior situation of the soviet republic is far from being quiet. Ukrainia is rebelling in all parts, mostly under Makhno, and also under some other Cossack "atamans" independent of him. In other Provinces the bands of Antonov, Kashirin, Saposhko, etc., are operating mainly for pillaging, but, in order to attain support of the population, they issue anti-Bolshevist proclamations. The rule of these rebels is strongest in the Provinces of Tambov, Samara, Kursk, Tschernigov, and Smolensk, and their forces are so considerable that constant aid from the capitals must be sent to the local Bolshevik garrisons. In the middle of January it was urged from Tambov that one cavalry regiment be sent there and the chief of local Bolshevik garrisons. In the middle of January it was urged from Tambov that one cavalry regiment be sent there, and the chief of local Bolshevist troops, Pavlov, requested in the telegram addressed to Avrov in Petrograd that 1,000 soldiers equipped with skis be sent to the Griasi station in the Tambov Province. It was added in the same telegram that these auxiliary troops should be reliable and therefore under no circumstances should they be natives of Tambov Province. In spite of the tenacity of these bands, the lack of any result from their activities and their bad coordination indicate that they are but of local significance. They are without political purpose and without proper guidance. Consequently they have not, nor will they have, any importance as an anti-Bolshevist movement in general. Again, the weakness of the Bolsheviks against these bands is due to the fact that the authority of the soviets prevailing along the railroad lines does not penetrate into the regions far from railroads, which are either in a state of anarchy or submit only to their local governments. Where some kind of Bolshevist authorities exist the contact with the government is very weak and mutual relations quite vague. As an example of this, in 1920 the soviets appointed Engineer Malevinski manager of all Siberian railroads. In Siberia, however, this appointment was not approved, and Malevinski had to return to Moscow and the government was obliged to yield.

In the cities and factories any organized anti-Bolshevist movement is hardly observable. It is true that the Mensheviks and the revolutionaries of the left carry on their propaganda, but in a weak and inefficient manner, evidently due to lack of support, because in most

cases the population and workmen regard with indifference and suspicion.

Of late the Bolsheviks have sent abroad, in increasing numbers, sailors who know foreign languages in the capacity of harbor workmen or merchant seamen. They are giving considerable amounts of money for use in spreading propaganda abroad among harbor workmen, and thus bring shipping activity in leading ports to a complete breakdown. Likewise these agents are ordered to carry on propaganda in the navies of the Allies, to organize communist groups, and to supply the manager of west European agitation, Comrade Litvinoff, with new communist literature. The literature is being smuggled to him via Esthonia and from there to the great ports of the world. At the Commissariat of Agitation and Propaganda a special agitation course has been established, and the "graduates" of this course are put at Litvinoff's disposal for assignment to different parts of the world inasmuch as they master foreign languages.

MEMORANDA ON EUROPEAN CONDITIONS.

(14230.)

Source: Lieut. (J. G.) B. H. Carning.

Russia. **10 March, 1921.**

The Bolshevik military machine has been estimated at between 400,000 and 1,000,000 men in the field. Their man power reserves are tremendous, but not available, owing to inability to equip and maintain them. The units comprising the Bolshevik army, barring Buddeny's cavalry, are largely composed of the best elements of the Czar's army, and are excellently drilled and well led. The Bolsheviks maintain a cadet school for officers, wherein are received and trained the radical element of college students and young men of similar mental capacity and tendencies. These young men are most carefully picked for intelligence, and combine the enthusiasm of youth with the natural ardor of the Slavonic temperament, and are under the tuition of experienced officers. Consequently the Bolsheviks have developed a most excellent officers' corps, to whom, jointly with their secret police and terrorism, is due their survival to date in the face of overwhelming obstacles. The staff work and tactical handling of their armies is in the hands of the most competent generals of the former régime, whose lives and families are held hostage for success. Buddeny's cavalry is a force of some 20,000 to 40,000 light or mounted infantry, composed of the offscourings of all Russia and part of Europe, who are held together by iron discipline and loot. They constitute under the leadership of Buddeny, a former sergeant of cavalry under the Czar and a born cavalry leader, a most effective fighting force of unusual mobility and practically

self-sustaining. The Russian equipment is either inadequate or unsatisfactory. The troops are clothed in burlap sacking and many wear biscuit tins for head protection. Their arms are of all nationalities and vintages, and while nearly sufficient in quantity their diversity, coupled with the wretched state of the Russian service of supply, seriously impairs the effectiveness of their fighting forces.

Sanitation and medical service are practically unknown, with the result that casualties from wounds and disease are abnormally heavy. This, with great physical discomfort in service, no pay, arduous duty, and disillusionment as to the Bolshevik cause, has left the bulk of their army either on the verge of revolt or at least with dangerously impaired morale.

The Bolshevik army is held together by its officer corps, the fear of death, and the hope of booty. They are still capable when opposed by an enemy who arouses their national feeling, as did the Poles and Gen. Wrangel as an ex-royalist, of excellent work. Consequently the Bolsheviks up to the minute the break actually occurs are and will be a formidable fighting machine. It is interesting here to note that I heard on fairly good authority that the Bolshevik debacle before Warsaw was due as much to a barrage behind the Poles as in front of them. The Bolshevik armies, however, were caught in the same trap, in attempting the same strategy as was Gen. Von Kluck in the early days of the war, and their inability to rush reinforcements, owing to transportation difficulties as much as the crushing effect on morale of a beaten foe turning on them caused their defeat.

The Russian Navy is practically nonexistent, few large ships being possessed by the Bolshevik. It is rumored, however, that they raised and put in operation two submarines that were sunk in Crimean waters. It is possible that the mining of H. M. S. *Tobago* in the Black Sea was the work of these boats. Trouble was expected with them during the evacuation of Sevastopol, but it was learned later that two to three thousand Bolsheviks had gained admittance to Constantinople on the vessels which brought down Wrangel's forces. It is noted that the French have possession of the following Russian vessels: One 12-gun superdreadnaught in commission, one superdreadnaught under construction, one modern destroyer, two or three torpedo boats, two cruisers, two submarines, numerous auxiliaries and several million dollars' worth of merchant shipping.

The political situation in Russia is likely to boil over any minute. Bolshevism has proven a miserable failure; the people are starving; industry is at a standstill; the railroads are in a hopeless condition; and the peasants, barring forced labor, are planting no more than for their own needs and hiding that. Each commissar is grafting

to the utmost limit, murder and theft are the order of the day, and no woman who is attractive is safe either from the soldiery or the very leaders of the Government, the commissars themselves. Trials are a farce, and the mere whisper of disloyalty signs a man's death warrant. Individual effort to get ahead is stifled by the very principles of Bolshevism itself, for anything made by a man is promptly confiscated for the good of the public, meaning mainly the commissar. The Government is a socialistic autocracy in the hands of three dictators—Lenine, a former Tartar nobleman; Trotsky, a Russian Jew; and one other whose name and origin I do not know, but who has shown more sincerity and ability than the other two. These three are assisted by an advisory council of six or seven commissars, but are not responsible to the people for their actions and are to each other only in so far as the others power actuated by jealousy is used to curb them. Bolshevism has not only failed to make good its promises but has blasted everything it has touched. The people of Russia are without food, medical attention, clothing, personal wealth of any kind, personal liberty of any sort, and have become a nation enslaved by a few men, without even the comforts and privileges granted a faithful animal servant in this country. For an organized supposedly civilized form of government directed by men of brains and education, with a definite policy and a careful governmental structure, it is the most stupendous, dismal, and appalling failure in the world's history. Its principles are impossible of practical human achievement, and its exponents are either able and criminals of the worst sort or impractical cranks and theorists. The only thing that holds the lid down is the Bolshevik secret police, backed by the savage ferocity with which a hint of disloyalty is stamped out by the Chinese murder squad of some 2,000 Mongolians hired by the Bolsheviks to do their dirty work. Man or woman once in the hands of these murderers can count themselves lucky if death comes quickly.

Russia is in the situation of a person with cancer who can not eat but lives on tissue stored up in healthier days. Her factories are idle or destroyed, due to war, civil and foreign, cessation of production of and importation of raw materials, employment of her man power in military or civil service, destruction or exile of her technical brain power, and the complete loss of initiative caused by the upheaval of her commercial life, also the fundamental principles of her present form of government, and the grafting of the commissars. Her currency is like a flat tire and her insignificant gold reserve is fast diminishing in such foreign purchases as can be made. It is quite true in Russia that most everybody prints their own, also there has been put in circulation some most excellent counterfeits of foreign money, particularly pound sterling. A few of the most necessary

supplies have been entering Russia through Georgia and the Ukraine. Now, military necessity has caused the occupation of Georgia and the Ukraine, and not only increase the difficulty of importing material but has aroused the hostility and fear of all nations around them.

The excellent railway system started by Count Witte prior to the war was never adequate to Russia's needs and now after years of war usage without replacement or repair has completely broken down, adding immeasurably to the difficulties of the Government, the hardships of the people, and the curtailment of military efficiency.

The nations are hopelessly at sea in their attitude toward Russia. The smaller and nearer ones live in fear and trembling. Rumania has received railroad equipment from the Baldwin Co., and already has large supplies of railroad and war materials captured during the war. This, not counting her strategic position, is sufficient of itself to almost guarantee her conquest by the Bolsheviks, particularly considering that her Government is unstable and her army impotent. The larger nations are bitterly jealous of each other, of their chances of territorial aggrandizement at Russia's expense, and of the chance of exploiting her commercial necessities and finances. Their hands are further tied by social unreast in their own countries, local political troubles, marked antagonism of the peoples to even the thought of a large war, restricted finance, and by the no means groundless fear that marked adverse action on their part will cause the direction of intensive Bolshevik propaganda toward them, bringing to a climax their own internal unrest while conducting a foreign war.

Bolshevik propaganda is one of the most effective, insidious, and appalling political forces in existence to-day. The large nations can not even, as did the British with the Turks and Greeks, set the small nations to pull their chestnuts out of the fire, as Russia is too big for them and harmony among them well-nigh impossible. The situation is further complicated by the natural animosity aroused among all Russians by foreign interference. Great Britain seems to have temporarily abandoned Russia as a sphere of activity barring such overtures as her diplomatic service makes toward a commercial understanding with Russia. This is believed to be due to the fact that her hands are full both with internal unrest and the solidifying of territory already acquired. France, however, is endeavoring to develop a sphere of influence, political, commercial, and financial, by assisting various of the contending factions in Russia, hoping thereby both by their gratitude and by definitely established treaties with them to accomplish this end. To date, her policy has been a dismal failure, principally because Russia is too large for any minor faction thereof to attain the supremacy unaided without time and opportunity to win over the densely ignorant mass of the people to their cause.

It is believed that the present Russian Government either will pass out and some form of social democracy emerge from chaos or the Bolsheviks will be forced into a career of military conquest to pacify their army, keep down unrest at home, and feed Russia by stripping conquered territory. This, if successful, will end only when the forces of the nations are arrayed against them, as Russia has immense man power and crude wealth and needs only time to solidify her present holdings and the services of technical experts, such as Germany and Austria might furnish, in order to become the greatest menace the world has ever seen. This latter contingency is entirely in accord in Bolshevik principle, policy, and practice.

DISCUSSION IN CHILE OF NAVAL PREPAREDNESS.

(14048.)

4 January, 1921.

There has recently been a controversy carried on in the Santiago Nacion relative to how Chile can best prepare her naval defense, one writer arguing that heavy ships still should form the main defense and his opponent that the defense should rest upon submarines, aircraft, and torpedo planes, and that a serious mistake was made in not acquiring the *Eagle* and using her as a parent ship for aircraft.

The Santiago Nacion of 14 December, 1920, comments editorially as follows:

National Defense of the Future.

The readers of La Nacion will have been able to take note in the Sunday edition of an interesting article that our paper offered to the consideration of the public which treated of the problems of national defense. Capt. Von Schroeders, our experienced collaborator on the questions of the Navy, has discussed with equal interest and attraction the necessities of the fleet which we ought to maintain in order to safeguard the national security and the prestige of the Republic.

Mr. Von Schroeders brings anew to the consideration of the country an idea that is difficult to separate from the problems of the future and which we have strengthened each time we have had the opportunity—the Pacific is the ocean of the difficult problems of the world. It is going to be the battlefield of the new great war of the powers, which perhaps is much nearer than is generally imagined. And Chile is called to occupy the zenith of the great strategic triangle where this battle for the supremacy of the world will be fought.

Well, then, experience counsels that the small countries should look for a means to avoid the fate that heroic Belgium and unfortunate Rumania have met with in the European conflagration.

In order to protect the weak and punctilious from this superior force, to insure our future tranquillity, much more than for the

possible complications with our small and turbulent neighbors of the north, we ought to construct without delay the new work of the naval and military power of Chile.

We have just bought a large dreadnaught and we would be able to acquire two more by great sacrifice. Of what service would they be to us? Surely only to lay them up in our strongest naval port, after having burnt in their upkeep millions that would have been enough to buy airplanes, submarines, destroyers, and torpedoes. A dreadnaught consumes per day 250 tons of coal, equivalent to the prices of an airplane, and each one of its projectiles cost 5,000 pesos, not in battle, but in the training of the gunners.

The celebrated phrase of Lord Derby, then, is well applied to Chile by our collaborator: "It is necessary that Great Britain learn or she will perish."

One discusses, then, the moral and material life of the Republic which can not be conserved by a naval museum composed of ships of every type and age imaginable, which can not be defended by great battleships whose price of 80 or 100 millions is beyond our resources. Is it not possible for Chile to buy airplanes when Great Britain, illustrious master for eminence and for excellence in matters of naval warfare, abandons its construction of battleships, when France renounces it, and Italy dismantles or converts into mother ships for airplanes those ships it had constructed during the last war? All that. Why?

Because the last word of naval science condemns those big ships. Because experience has just demonstrated that the leviathan of the seas, the proud ship "without fear of anything," is forced to yield before the potency of the torpedo fired from the depths of the sea or from the altitudes of the sky. All that very complicated machine bristling with cannons, manned by thousands of men, is absolutely vulnerable, is destroyed and perishes in a moment under the fire of the torpedo plane that has recently revolutionized the methods of combat, or the action of the magnetic torpedo that explodes upon coming into contact with the steel of the hull of the ship.

What, then, do we lack essentially for our defense in the moment that Great Britain suspends the construction of the dreadnaughts of the *Hood* type and declares that she will not build any more ships of the same type?

We necessarily lack only that which we have refused through a system of haggling incredible in a State like Chile. They offered us, together with the other big battleships, the *Eagle* (*ex-Cochrane**), converted into a mother ship for airplanes. In Congress they firmly urged the Executive to acquire without delay that ship capable of assuring the defense of our coasts and of giving us the naval supremacy of this side of the Pacific coast of South America.

With an incredible trading spirit they requested a reduction in the price of that ship to a sum comparable with that of a vulgar "llapa" or profit or commission of purchase, without taking into consideration that the evolution of the British Navy justly makes this ship one of the few that are going to serve it, without stopping to think that the alteration of whatever ship to that same special type requires the expenditure of 4,000,000 pounds sterling. This unit, which would have permitted us to advance ourselves to the last evolution of naval science, whose purchase was earnestly solicited by this paper, constitutes to-day an irremediable void in our national defense.

It is already difficult to remedy the evil that has been caused, but it is necessary that the country open its eyes and that the most sensible and important preoccupation of the Government be the adoption of a policy of national defense, of a plan of naval power that will permit it to acquire from year to year the resources that it needs. The first term of that necessity is the purchase of airplanes and of torpedo planes on a great scale in order to cooperate with the submarines. If we possess abundant material of first order of this kind, we will not be perhaps invulnerable in the absolute sense of the word, but, nevertheless, it will make us profoundly respected against the temptations of force that never abandon the great powers when the weak countries are interposed in the way of their interests or of their necessities.

We are not calamity howlers. But ever that ostentatious and trembling Society of Nations, whose evil auguries rise to the firmament from the chimneys of Geneva, there is a mysterious rumor of arms and warlike preparations in the world, that seem to speak to us of the possibility of a new great war, and this war, as we have said, would be in the Pacific. Woe unto us if it breaks out before we have been able to obtain the elements necessary to maintain at all costs the precious integrity of our neutrality and of our honor.

ENTERTAINMENT OF PACIFIC FLEET BY GOVERNMENT OF CHILE.

(12570.)

Source: Reliable. **17 February, 1921.**

The Government of Chile provided most generously for the entertainment of officers and men.

Arrangements were made by the captain of the port, Capt. de Navio Arturo Swett, to take all vessels of the fleet to buoys. With the exception of a few buoys belonging to the Navy of Chile, these buoys were owned by private companies, who donated them without charge. The commander in chief decided, however, to anchor all the heavy ships, so that only the destroyers and tenders went to the buoys.

A special parlor car was attached to the express on 1 February to take the admiral and staff to Santiago, and similarly on 2 February on his return to Valparaiso. No fares were charged.

A special train, consisting of nine first-class coaches, capacity 585 persons, was provided on 1, 2, 3, and 4 February, to carry men and officers free to Santiago and return.

On 2, 3, and 4 February, the Government provided a dinner for all men going to Santiago on the special train. This dinner was given in the restaurant in the Quinta Normal, one of the parks in Santiago.

On 1, 2, 3, and 4 February a luncheon was provided for all officers on leave in Santiago, the expectation being that about 60 or 70 would attend. These luncheons were at different places, that on 4 February being given in the Union Club of Santiago.

On 31 January, the day of arrival, a reception was given at the naval club in Valparaiso to Admiral Rodman and 150 officers.

On 1 February, the commander in chief, accompanied by the admirals, personal staff, and some captains, 16 in all, proceeded to Santiago and were received by the President of Chile and all the ministers at 3 p. m.

In company with the President, they reviewed the United States landing party, which paraded in honor of the President. At 8.45 p. m. they attended a banquet in their honor given by the President of Chile in the Moneda (official residence). The ambassador, secretary, and naval and military attachés also attended these functions.

(Note.—In addition, the American colony gave a luncheon to the admiral and officers at the Union Club at 1 p. m., and the ambassador gave a reception at the embassy at 5.30 p. m.

On 2 February a large garden party was given by the director general of the navy, Vice Admiral Joaquin Munoz Hurtado, at the naval arsenal at Las Salinas, a special train being provided to take the guests from Valparaiso and return. The admiral and 150 officers were invited. This was a very pleasant party, to which the very best people were invited. That evening the municipality of Valparaiso gave an evening fête for the admiral and officers.

On 3 February the President of Chile, accompanied by the ministers, visited the U. S. S. *New Mexico* officially at 3 p. m. That evening the intendente of Valparaiso gave a banquest to the admiral and about 15 officers; the ambassador and naval attaché attended this banquet.

On 4 February there was no official entertainment by the Government as a big reception was given on the *New Mexico* by the admiral.

On 5 February the fleet departed.

In addition to the trains mentioned in paragraph 4, a special train was run on 1, 2, 3, and 4 February to the field of the Valparaiso Sporting Club, in Vina del Mar, for the purpose of taking out men

and officers who desired to play base ball, football, or other out-of-door sports. This train left Valparaiso at 2 p. m., and Vina at 6 p. m.

The intendente of Valparaiso secured for the use of the shore patrol in Valparaiso the use of fire-engine house No. 5. This was centrally located near the men's landing, and served its purpose admirably.

The passenger landing facilities in Valparaiso are most meager, and would have been wholly inadequate to the needs of the fleet. The captain of the port, therefore, secured two pontoons and made a new landing place, which was reserved for the use of the men. It was necessary also for a road to be made to the landing point, all of which was carefully attended to.

A large committee of prominent Chilean gentlemen was appointed by the President to arrange matters in Santiago. This committee ment the admiral on his arrival in Santiago and planned the breakfasts given there.

The cooperation of the police of Santiago and Valparaiso with the shore patrol was to the best of my knowledge perfect.

There was manifested by all officials, so far as I can learn, a most sincere desire to cooperate in every way to make the visit pass off successfully, and in the way of entertaining officers and men, they did all that was possible in the limited time. I can think of nothing that was omitted. I wish further to invite attention to the fact that the visit of the fleet followed closely upon the very extended and expensive celebration of the four hundredth anniversary of the discovery of the Magellan Straits and also closely upon the visit of the Japanese Squadron in January.

JAPANESE NAVAL ESTIMATE FOR FISCAL YEAR 1921-22.

(13820.)

Source: Reliable. **3 February, 1921.**

The following are the principal general expenditures of the Japanese Navy Department for the fiscal year 1921:

Ordinary expenditures	¥144,811,078	
Extraordinary expenditures	353,826,000	
Total		¥498,637,078
Compared with 1920 appropriations:		
Ordinary expenditures	109,063,369	
Extraordinary expenditures	248,705,329	
Total		357,768,698
Excess of 1921 estimates over 1920 appropriations		140,868,380

Ordinary expenditures.

I. Navy department proper:		
A. Salaries	¥365,635	
B. Office expenses	162,511	
Total		¥528,146

II. Naval expenditures:		
A. Salaries	¥37,939,657	
B. Office expense and repairs	629,179	
C. Miscellaneous allowances and expenditures	3,374,515	
D. Food and clothing	20,068,665	
E. Shipbuilding, manufacture of arms and repairs	49,155,530	
F. Maneuver expenditure	859,595	
G. Invalid expenditures	551,012	
H. Upkeep of naval and strategic ports	669,692	
I. Operations of ships	28,738,232	
J. Waterways expenditure	330,239	
K. Training expenditure	901,686	
L. Pensions	930,610	
M. Prison expenditure	9,479	
N. Secret fund	80,000	
O. Transferred to ships fund	20,000	
Total		¥144,258,091
III. Miscellaneous expenditures		24,841
Total ordinary expenditures		144,811,078

Extraordinary expenditures.

I. Expenditures for completion of armament:		
A. Construction of warships		¥273,301,359
II. Marine and land equipment:		
A. Office expenditures	¥1,337,423	
B. Arsenal equipment	35,753,796	
C. Equipment for defense detachments	14,573,142	
D. Engineering training equipment	2,067,057	
E. Hospital expenses	486,995	
F. Miscellaneous equipment at naval ports	1,381,043	
G. Construction of quarters for men on detail at strategic ports	133,000	
		55,732,456
III. Equipment of warships and ships:		
A. Special repairs of warships and ships	1,928,748	
B. Construction of odd craft	954,011	
C. Reflotation of sunken warships in rivers	43,200	
		2,925,959
IV. Expenditures for munitions:		
A. Extraordinary replenishment of munitions	12,292,909	
B. Special increase of training equipment	1,216,613	
C. Fund for hydroplane experiments aboard ship	717,234	
D. Renewal of smokeless powder	2,807,508	
		17,034,264
V. Fund for aviation experiments		223,961
VI. Transfer to special account fund:		
A. To make up deficit in naval arsenal fund	1,600,000	
B. Transfer to transportation fund of naval powder factory	600,000	
C. Transfer to transportation fund of naval explosive factory	700,000	
		2,900,000

VII. Building and repair expenditures:		
A. Reconstruction of offices at Makimi (Bako) strategic port	¥94,059	
B. Removal of hidden searchlights at specified strategic ports	9,972	
C. New works	90,000	
D. Repairs	75,000	
		¥269,031
VIII. Construction on behalf of other parties		1,313,756
IX. Expenditures in connection with sale of Government maps and diagrams		109,530
X. Expenditures in connection with administration of pension office		15,584
XI. Temporary expenditures		100
Total extraordinary expenditures		353,826,000

JAPANESE NAVY PROGRAM.

(7206-C.)

Source: Reliable. **18 February, 1921.**

The following discussion occurred in the Lower House of the Diet 29 January: In reply to a question by Mr. Uehara as to whether the 8–8 ships would be sufficient to protect the coast of Japan, Admiral Kato, Minister of the Navy, replied:

"This country has such a long coast line that to protect it properly a very large fleet is needed. There are two ways of protecting this country, one by fleets stationed at different points (defensive) and another by a cruising fleet.

"If other countries build ships, this country must build ships. Now, America is enlarging her Navy, and we must not lose track of it. America is a rich country; Japan is poor. There is a difference that makes a race (in shipbuilding) impossible.

"As Mr. Borah says, there must be a mutual understanding. I wish to say concerning the limitation of military preparations that our 8–8 Fleet was suggested more than 10 years ago and that it can not compare with the American naval enlargements. If it is thought so it is a big mistake. That means that we never thought of racing with any country.

"Concerning the limitations of the Navy: Mr. Borah's suggestions came out only in the newspapers and is not practicable and it will take some time to make it practicable. There will be some obstacles; it can not be done so easily. If it becomes a question the Japanese people will be glad to deal with it fairly.

"Suppose Japan's 8–8 Fleet is completed, its strength can not be compared with English and American sea power. It is much inferior; and we must not think that America is the only possible enemy."

[Translated from the Jiji of 1 February, 1921.]

The following is an excerpt of a discussion between the Minister of the Navy and Mr. Kobayashi which occurred in the Lower House of the Diet 31 January regarding the expense of building warships:

"Mr. KOBAYASHI. Compared with England, our expenses for the building of ships is lower, but some material is cheaper in England than in Japan, so we better buy such material there.

"Minister of the Navy Mr. KATO. Yes, some material is cheap, indeed, but we can not say that all is like that.

"Mr. KOBAYASHI. If you can get satisfactory material in the country (Japan) the Government should give the work to our people and provide them with some assistance.

"Mr. KATO. I favor that very much, and already the factories of the western Provinces are making material for warships."

[Translated from the Tokyo Asahi of 1 February, 1921.]

The following is an excerpt of a discussion between the Minister of the Navy and Mr. Takagi which occurred in the Lower House of the Diet 31 January regarding the expense of building warships:

"Mr. KATO, Minister of the Navy. Division of work is the principle in England by which work is being done quickly and comparatively cheap. Still it can not be said that Japanese products are entirely expensive, so, except the more important things, we had better ask the factories of the country to make them.

"Mr. TAKAGI. Can not you economize a little more on the expenses of the navy?

"Mr. KATO. We are doing so. In ordinary times old warships are generally used, keeping good ones for war time; and since last year the principal warships have been reduced from three to two in number. The crews number the same; the coal expense is less."

[Translated from Jiji 6 February, 1921.]

Mr. HISASHITA. England and America are trying to extend their navies, but Japan can not do the same. But has the Japanese Government any intention of doing so?

Admiral KATO, Minister of the Navy. Even though countries extend their navies, it is impossible for Japan to compete with them. Besides, Japan has no desire to compete with America. Henceforth, if Japan's national resources increase, and if there is any improvement in foreign trade, then Japan will be obliged to extend her navy, but at present it is quite impossible.

Mr. HISASHITA. There is an opinion that rather than build large warships and huge guns, construct chiefly small ships such as submarines and torpedo-boat destroyers. What is the opinion of the authorities?

Admiral KATO. England and America and Japan also are, of course, studying the subject. The main reason is to economize on the expenses of building large warships, but at present England and America still have the idea of making big ships and huge guns. Since the idea of making big ships and huge guns, since the idea of other countries have not changed, Japan must also follow this idea.

Mr. HIROSE. What is the policy of the Government with regard to the South Sea Islands?

Admiral KATO. We are now considering the matter. It is only temporarily that the navy has anything to do with the islands. We have to study the matter, but in my opinion I do not think it right to put them under the control of the navy.

BOLSHEVIST OIL PRODUCTION.

(14096.)

Source: Reliable. **21 January, 1921.**

A correspondent of The Near East under dates as recent as 23 December, 1920, and 6 January of the current year reports that it is now possible to calculate the total deliveries of oils to soviet Russia in 1920; that is to say, the first year of Bolshevist rule in the oil fields.

The richest Russian oil fields are in the Apsheron Peninsula, with Baku as a center. The Baku district produces three-quarters of all the oil in Russia. Thus in 1912 the Baku oil fields produced 465,000,000 poods[1] of the total output of 565,000,000[2] for all Russia, of which about 42,000,000 poods were exported and the remainder was absorbed by the home market.

According to the figures of the soviet paper Ekonomicheskaia Ehizn, the Bolshevists reckoned on being able to obtain 150,000,000 poods of oil in this district from May (when they seized it) to 1 January, 1921, but apparently even this "famine" estimate has not been justified. The following table shows the output of oil for the first three and one-half months, which is not more than 57 per cent of the estimated quantity.

Months.	1,000 poods.
May	16,536
June	14,948
July	13,201
August	12,163
September (15 days)	5,367

The above table is taken from the Ekonomicheskaia Zhizn of 13 October (No. 228, 13 October). The same paper likewise states

[1] One pood equals 36 pounds.

[2] The figures are taken from Mitriev's "Economic Geography of Russia."

that for the first eight months of 1920 the output averaged 15,500,000 poods per month. In 1919 the average was 19,000,000 poods, and in 1913, 37,000,000 poods.

In July, 1920, the depth of wells bored was equal to 238 meters, while in the "unfavorable" year of 1919 (the expression used by the Ekonomicheskaia Zhizn) the average was 1,000 meters per month. At the beginning of 1920 there were 1,800 wells in the principal oil fields, in June there were 1,181, and in the end of August 245.

According to the Baku soviet officials, this decline in production was due to the wholesale exodus of workmen, owing to food shortage. It is rather difficult to understand why food should be scarcer in Baku, under the Bolshevists, than under the Azerbaijan Government. The Bolshevists can bring as much corn as is wanted from the neighboring Kuban and Torek territories, whereas the Azerbaijan Government was not allowed to import corn from these territories.

The usual method of transporting oil from Baku to Russia is by the Volga waterways. The oil is carried up the Volga waterways. The oil is carried up the Volga as far as Ryninsk. Thus of the 4,500 kilometers over which Baku oil has to travel to Petrograd, only 450 kilometers are railways, the rest being waterways.

According to the plan of the Bolshevists, during the navigation of 1920 the transport of oil from Baku up the Volga should have amounted to 169,900,000 poods, of which 22,200,000 were to be delivered at Astrakhan and 147,700,000 were to be sent up the Volga. By 1 October, 116,200,000 poods (70 per cent) reached Astrakhan, and the Bolshevists reckon on transporting 40,000,000 poods more. As regards transport up the Volga, by 1 October, two weeks before the navigation stopped, 84,400,000 poods (57 per cent) were delivered.

The aggregate deliveries up to 15 September (i. e., a month before navigation stopped) amounted to 32,300,000 poods; that is to say, in the four months when the Volga is navigable, about 27 per cent of the proposed quantity of oil was delivered. The amount of oil which the Bolshevists sent off during the last month is unknown, but the Economichoskaia Zhizn shows that by the end of the navigation there were about 17,000,000 or 18,000,000 poods of petroleum and mazout at the various Volga wharves.

The oil which had already been transported up the Volga is apparently quite exhausted. The paper quoted above says: "The six months' consumption of the railways alone is estimated at 25,000,000 poods. The stock of oil for railways amounts to 9,000,000 poods, leaving a shortage of 16,000,000 poods." Up to 1 October, i. e., the end of the navigation, water transport had obtained only

7,300,000 poods of oil, instead of the 26,300,000 poods required. The journal adds: "Industrial and local consumption and the first run on the opening of navigation will require approximately 14,-000,000 poods of oil. Thus thefuel committee will need 30,000,000 poods by 1 May. In connection with this, measures have been taken to revise the demand and reduce the amount to be supplied."

Even supposing that Baku supplied all the oil exported from Russia, it still used to send up to 420,000,000 poods to Russia, and at least two-thirds of this was brought up the Volga. That is to say, in normal times, no less than 280,000,000 poods of oil used to be transported up the Volga, whereas the Bolshevists, by their confession, sent off (but did not deliver) only 84,000,000 poods, and even this figure is greatly exaggerated, judging by Bolshevist statistics of the amount of oil at the various Volga wharves.

DISPOSAL OF OBSOLETE BRITISH WARSHIPS.

(184–A.)

Source: Reliable. **2 March, 1921.**

These vessels are usually offered for sale by competitive tender, tenders being invited from suitable firms in this country, and in most cases from certain continental firms who specialize in ship-breaking.

Such vessels are occasionally purchased by salvage companies, agents, and speculators, but, generally speaking, the bulk of them are bought by firms specializing in ship-breaking work only, of which there are a number in this country.

The vessels are sold outright where they lie for a lump sum per ship, upon payment of which the usual procedure is for purchasers to take delivery of the vessels as they lie at the various dockyards and ports and remove them, either under their own steam, or by tug, to their breaking-up yards, where the vessels are broken up and the arisings disposed of.

There is no detailed information as to the procedure employed by the various firms in regard to the demolition of the vessels, or what methods are adopted by them to dispose of the resultant scrap material as, after removal of the vessels by the purchaser, the Admiralty have no further interest in the vessel or her disposal, except in certain cases to ascertain that she has been broken up or to approve or otherwise of a resale. It is probable that the methods used in breaking up the ship and in disposing of resulting materials differ according to the contractor concerned.

A rough outline of the procedure generally followed by ship breakers is as follows:

(*a*) The ship having arrived at the breaking-up yard, as indicated in paragraph 3 above, a careful survey of the ship and its fittings is

made by such experts as are available in the ship-breaking firm's establishment.

(*b*) After the survey is made, an outline of procedure is determined upon in accordance with the type of ship, the number of auxiliaries on board, and the condition of the vessel as she stands. The material is generally divided in accordance with the following:

(1) Steel, hull, and fittings.
(2) Composition metal
(3) Engines and engine fittings.
(4) Auxiliary machinery.
(5) Electrical fittings.
(6) Wood fittings.
(7) Miscellaneous equipment.

The auxiliary power fittings, such as pumps, engines, motors, etc., are removed for such disposition as may be practicable, efforts being made to dispose of them for such commercial purpose as they may be suited for.

A special effort is made to salvage all composition metal, which is treated as a separate item and disposed of according to market conditions.

So far as breaking up the hull and hull fittings is concerned, the method usually followed is to cut the vessel up by means of the acetylene torch into such parts as are capable of being readily handled and shipped with the facilities available at the ship-breaker's plant.

GREAT BRITAIN, NAVY ESTIMATES FOR THE YEAR 1921-22.

Source: Reliable. (14277.) **4 March, 1921.**

ABSTRACT OF NAVY ESTIMATES FOR 1921–22.

I. Numbers.	Estimates (gross estimate).
Total number of officers, seamen, boys, Coast Guard, and Royal Marines.	[1] 123, 700

II. Effective services.	
Wages, etc., of officers, seamen, and boys, Coast Guard, Royal Marines, and mercantile officers and men	£18, 390, 800
Victualing and clothing for the navy	9, 980, 685
Medical establishments and services	733, 392
Civilians employed on fleet services	394, 050
Educational services	508, 355
Scientific services	533, 477
Royal Naval Reserves	581, 765
Shipbuilding, repairs, maintenance, etc.:	
Section I.—Personnel	**11,648,969**
Section II.—Matériel	**17,946,500**
Section III.—Contract work	**6,310,775**

[1] Maximum for the year, viz, on 1 April, 1921. This number will be reduced to 121,700 as soon as practicable.

	Estimates (gross estimate).
Naval armaments	£6,769,317
Works, buildings, and repairs at home and abroad	5,896,600
Miscellaneous effective services	2,777,090
Admiralty office	1,756,737
Total effective services	84,228,512

III. Noneffective services.

Half-pay and retired pay	2,122,848
Naval and marine pensions, gratuities, and compassionate allowances	4,018,408
Civil superannuation, compensation allowances, and gratuities	817,101
Total noneffective services	6,958,357
Grand total	91,186,869

ESTIMATES.

1921–22.			1920–21.[1]		Difference on net estimates.	
Appropriations in aid.	Net estimate (total numbers).	Gross estimate.	Appropriations in aid.	Net estimate (total numbers).	Increase.	Decrease.
.....	[2] 123,700	136,000	.....	136,000	.....	12,300
£76,800	£18,314,000	£21,242,000	£78,000	£21,164,000	.....	£2,850,000
2,159,685	7,821,000	10,943,619	2,209,119	8,734,500	.....	913,500
12,892	720,500	723,694	15,194	708,500	£12,000	.....
5,050	389,000	613,315	515	612,800	.....	223,800
42,855	465,500	521,765	63,265	458,500	7,000	.....
84,477	449,000	422,367	117,767	304,600	144,400	.....
1,165	580,600	452,892	3,092	449,800	130,800	.....
30,369	11,618,600	12,088,700	25,500	12,063,200	.....	444,600
6,050,000	11,896,500	18,607,700	11,286,000	7,321,700	4,574,800	.....
40,575	6,270,200	11,888,600	100,000	11,788,600	.....	5,518,400
43,317	6,726,000	8,237,434	329,034	7,908,400	.....	1,182,400
60,000	5,836,600	5,245,000	91,000	5,154,000	682,600	.....
52,090	2,725,000	4,358,530	52,030	4,306,500	.....	1,518,500
3,937	1,752,800	1,932,455	3,755	1,928,700	.....	175,900
8,663,212	75,565,300	97,278,071	14,374,271	82,903,800	5,551,600	12,890,100
29,348	2,093,500	2,450,384	20,384	2,430,000	.....	336,500
14,908	4,003,500	4,674,375	15,875	4,658,500	.....	655,000
401	816,700	880,451	451	880,000	.....	63,300
44,657	6,913,700	8,005,210	36,710	7,968,500	.....	1,054,800
8,707,869	82,479,000	[1]105,283,281	[1]14,410,981	[1]90,872,300	5,551,600	13,944,900
Net decrease						8,393,300

[1] Including supplementary estimate, 7 December, 1920 (Parliamentary Paper No. 228).

NOTE.—The decrease on gross expenditure is £14,096,412.

SPECIAL NOTES ON BRITISH NAVY.

Source: Reliable.

The following notes are compiled from latest information available:

Estimates.—British Navy estimate, £91,186,869.

This includes £2,250,000 for replacement of obsolescent ships and £3,250,000 for completion of ships now in hand.

Building program.—The effective ships now in hand are:

		Tons.
4	Light cruisers	29,030
1	Destroyer leader	1,750
3	Destroyers	4,010
8	Submarines, first line	7,400
1	Fleet submarine, first line	1,880
17	Total	44,070

The estimates call for four battle cruisers, no details published, to be laid down in 1921. Policy is to maintain a one-power standard.

Policy in regard to present fleet.—The number of capital ships in *full commission* is to be reduced from 20 to 16. These 16 ships will probably be:

Ten battleships carrying 15-inch guns; i. e., *Queen Elizabeth, Warspite, Valiant, Royal Oak, Barham, Resolution, Malaya, Royal Sovereign, Revenge, Ramilles.*

Three battle cruisers carrying 15-inch guns; i. e., *Repulse, Renown, Hood.*

Three battle cruisers carrying 13.5-inch guns; i. e., *Lion, Tiger, Princess Royal.*

Light battleships carrying 12-inch guns are to be considered as effective but to be held in reserve, and also in the reserve will be the 13.5-inch gun battleships. These are probably the following: *Hercules, Colossus, Neptune, Collingwood, St. Vincent, Superb, Temeraire, Bellerophon, Agincourt,* and *Dreadnought;* 10 in all.

The number of capital ships on the *effective list* is to be 30.

These will probably be the 16 in full commission, plus the 10 battleships in reserve, plus the battle cruisers *Indomitable, Inflexible, New Zealand, Australia.*

These effective ships include the Australian ships.

The older battleships are to be transferred to the disposal list.

Policy in regard to foreign stations.—The South African and North American squadrons are to be reduced by one light cruiser each, which will leave:

South African Squadron.—2 light cruisers, 2 gunboats, 1 depot ship.

North American Squadron.—2 light cruisers, 2 sloops, 1 depot ship, 1 surveying ship.

The South American Squadron, consisting of 3 light cruisers and 1 sloop, is to be temporarily withdrawn.

Personnel.—During 1921 the personnel of the fleet is to be reduced to 121,700 officers and men.

JAPAN, NAVAL POLICY.

(12495.)

Source: Reliable. **3 March, 1921.**

It has been stated that the Diet vote on disarmament did not in the least show the true sentiment of the country, but that the overwhelming defeat of the measure was more in the nature of a personal disapproval of Mr. Ozaki.

Mr. Ozaki is believed to be sincere, yet the naval authorities would rather have him fighting increased armament than any other strong man in politics, because many people have lost faith in him and his following would not be influential.

When Mr. Ozaki was in the Okuma cabinet a bill was passed increasing the army, and although prior to that time he had always opposed an increase in the military forces, yet on this occasion he sacrificed his personal policy rather than desert his party. This action was not understood by many of Ozaki's followers, who deserted him, and have never since believed him to be entirely sincere.

It is said that Mr. Ozaki is very poor and that he neither asks nor has a chance of receiving assistance from wealthy individuals or organizations, and in consequence his influence will not be strongly felt until the time comes when the poor people rise up against the few wealthy ones who control the country. This time must come if the wealthy class does not change its arrogant and selfish attitude.

During the war it was extremely difficult and in some cases impossible to persuade private shipbuilding companies to build naval vessels, but when the shipbuilding slump came all yards clamored for naval construction to tide them over and keep them from failing. The capital invested in many of these yards is owned by such politically influential companies and individuals that the navy department has been forced to assign them ships. These companies in return will stand by the Government in defeating disarmament. In this connection he stated that the Mitsui Co. is generally supposed to control the Seiyukai Party and the Mitsubishi Co. the Kenseikai Party. If the above is true, it is not difficult to understand the Kenseikai Party's vote on disarmament, when it is remembered that the Mitsubishi Co. controls a shipyard at Nagasaki, one at Kobe, the Yokohama Dock Co., an internal-combustion engine and airplane factory at Nagoya, and a torpedo factory at Nagasaki.

From the above it would seem that there is little or no hope of restricting naval construction.

Comparative strengths of the five great naval powers in effective fighting ships.

SHIPS BUILT.

	Great Britain.		United States.		Japan.		France.		Italy.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.
Battleships, first line	26	635, 650	16	435, 750	6	178, 320	7	161, 911	4	89, 170
Battleships, second line	19	343, 100	16	240, 240	4	71, 500	10	166, 039	5	68, 890
Battle cruisers, first line	6	175, 400	.....	.....	4	110, 000	.....	.....	.....	.....
Battle cruisers, second line	4	72, 100	.....	.....	.....	.....	.....	.....	.....	.....
Cruisers, first line	2	37, 200	.....	.....	.....	.....	.....	.....	.....	.....
Cruisers, second line	18	108, 500	10	131, 300	5	58, 206	7	89, 472	3	31, 228
Light cruisers, first line	15	198, 945	.....	.....	8	36, 350	4	17, 802	5	20, 678
Light cruisers, second line	24	113, 895	3	11, 250	1	4, 100	1	3, 444	3	10, 108
Destroyer leaders	24	41, 452	.....	.....	.....	.....	.....	.....	.....	.....
Destroyers, first line	334	355, 850	277	328, 717	35	36, 263	10	9, 468	14	17, 451
Destroyers, second line	42	34, 261	21	15, 582	12	7, 850	36	25, 357	29	21, 637
Submarines, first line	85	58, 136	56	33, 841	1	900	17	12, 603	9	6, 256
									1	(?)
Submarines, second line	65	23, 844	44	16, 735	12	4, 900	45	17, 860	13	4, 992
Fleet submarines, first line	14	26, 320	2	2, 212	.....	.....	.....	.....	.....	.....
Fleet submarines, second line	6	7, 200	.....	.....	.....	.....	.....	.....	.....	.....
Monitor submarines	3	4, 800	.....	.....	.....	.....	.....	.....	.....	.....
Cruiser submarines	1	2, 014	.....	.....	.....	.....	.....	.....	.....	.....
Aircraft carriers, first line	4	67, 200	.....	.....	.....	.....	.....	.....	.....	.....
Aircraft carriers, second line	2	19, 050	.....	.....	.....	.....	.....	.....	.....	.....
Total	724	2, 293, 217	445	1, 215, 627	88	508, 389	137	503, 956	85	270, 410

SHIPS BUILDING, AUTHORIZED, AND PROJECTED.

	Great Britain.		United States.		Japan.		France.		Italy.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.
Battleships, first line	.....	.....	11	421, 900	7	289, 000	4	116, 000	3	92, 700
Battle cruisers, first line	.....	.....	6	261, 000	8	320, 000	.....	.....	.....	.....
Light cruisers, first line	4	29, 030	10	75, 000	12	66, 000	6	31, 200	.....	.....
Destroyer leaders	1	1, 750	.....	.....	.....	.....	12	21, 600	5	12, 500
Destroyers, first line	3	4, 040	21	25, 454	37	37, 015	1	890	5	4, 750
Destroyers, second line	.....	.....	.....	.....	.....	.....	.....	.....	6	4, 540
Submarines, first line	8	7, 400	38	32, 998	10	8, 864	.....	.....	2	1, 378
					[1] 15	(?)				
Submarines, second line	.....	.....	.....	.....	.....	.....	[2]	.....	2	788
Fleet submarines, first line	1	1, 880	4	6, 056	.....	.....	.....	.....	.....	.....
Cruiser submarines	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aircraft carriers, first line	.....	.....	.....	.....	1	15, 000	1	(?)	.....	.....
					1	(?)				
Total	17	44, 070	90	822, 408	75	735, 879	23	169, 690	23	116, 655
					16	(?)	1	(?)		

[1] Unofficially reported that by 1927 Japan is to have 120 submarines.
[2] Unofficially reported that an order has been given for 100 submarines.

COMPARISON OF AMERICAN AND JAPANESE NAVIES, BEARING ON SUBJECT OF DISARMAMENT.

(08—353.)

Source: Reliable. **8 February, 1921.**

The following comparisons between the navies of the United States and Japan are translated from an official Japanese publication. This comparison is worthy of considerable note, as it unquestionably discloses the naval general staff's views regarding the ultimate relative strengths of the two navies.

"The general cry from all quarters is that Japan can not hope, and does not wish, to compete with the United States in a building race. *Yet the comparison drawn by the Navy Department itself shows that the real intention is to equal the strength of the United States Navy by 1927.*

Further, in 1919 the minister of marine (Admiral Kato) told the Diet that the navy's ideal was a double 8–and–4 organization, all ships of which to be less than eight years old. On 7 January, 1921, the Jiji printed an article stating that Japan would need three 8–and–4 fleets, all under eight years old if the United States started another building program between 1923 and 1927.

The comparisons show only those ships eight years old and under, and the number of Japanese submarines is not given.

COMPARISON AT PRESENT, 1921.

	America.	Japan.
Battleships	10	5
Battle cruisers	0	4
Cruisers	0	2
Destroyers	259	38
Submarines	24	?

COMPARISON IN 1923.

Battleships	19	7
Battle cruisers	6	2
Cruisers	10	13
Destroyers	305	74
Submarines	63	?

COMPARISON IN 1927.

Battleships	12	8
Battle cruisers	6	8
Cruisers	10	28
Destroyers	120	73
Submarines	60	?

COMPARISON OF OLD AND NEW FLAGSHIPS OF JAPAN AND UNITED STATES.

	New Mexico.	Ise.
Displacement.....tons..	32,000	31,260
Speed.....knots..	21	23
Main battery.....inch..	10–14	12–14

	California.	Nagato.
Displacement.....tons..	32,000	33,800
Speed.....knots..	21	23
Main battery.....inch..	12–14	8–16

BRITISH LEADER GEAR.

(13343.)

Source: Reliable. **8 January, 1921.**

A trial was conducted on the afternoon of 4 January on board H. M. S. *Truant* (an old British destroyer). The *Truant* left the harbor and picked up the cable, and proceeded to sea to the end of the cable, which was about 17 miles distant. The *Truant* then proceeded to a point at which the signals could not be heard and, turning, stood back to the entrance of the port, attempting to pick up the signals by means of the towed electrodes. The demonstration was a success in every way.

This system is apparently only installed in the Portsmouth and Harwich Harbors, in the former for a length of about 17 miles, and in the latter for about 25 miles. It is understood that the Harwich cable was used during the latter part of the war.

Experiments are in progress to improve the present cable by equipping it to locate position of ship at any moment during the passage over the cable. It is planned to do this by superimposing a direct current over the alternating current in the cable and a consequent arrangement of varying tones at different points in the cable. They are not optimistic about this, but it is a general indication of their present experiments. They state that their chief work on the system as now used is to reduce attenuation and other faults.

With a voltage of 220 to 225, there is a current of 10 amperes entering the Portsmouth end of the cable, while attenuation reduces this to about 5.8 amperes at the outer end. While this is a very material reduction, the amount available at the end, however, is quite sufficient for present needs, and gives a radius of about 300 yards. The towed electrodes are used to pick up the cable at a serviceable distance of about 1,200 yards. Once located, the coils alongside the bridge are used for locating the position more definitely.

The officer conducting this trial stated that he believed a single cable would be superior to two cables and that the cable should only be used for incoming traffic leading up to the entrance of a harbor. Outgoing traffic, once clear of the harbor, should keep clear of the cable and its approaches.

JAPAN'S EXPANSION OF FACILITIES FOR PRODUCING WAR MATERIALS.

(12576.)

Source: Reliable. **3 February, 1921.**

The new gun factory at Hiro (near Kure) is to have double the capacity of the present Kure gun factory. It is expected that this factory will be completed in about three years, and when completed will employ between 20,000 and 30,000 workmen.

A British firm has just supplied this factory with four lathes for turning 18-inch guns, and the informant believes that work will be started on 18-inch guns by the end of the present year (1921) and prior to the completion of the factory.

He further states that the new naval gun factory at Sasebo will employ about 12,000 workmen, but that, with the machinery so far ordered, this factory will be unable to manufacture guns larger than 12-inch.

The informant states that Muroran Steel Works can not build guns larger than 12-inch, and is of the opinion that all guns over 12-inch will in the future be built at Kure and Hiro.

He has visited all arsenals in Japan and states that the present *activities of the Japanese in regard to the production of war materials is greatly underestimated.* All factories, except Kure, are working full capacity, 12-hour days. Kure is running 15 hours a day.

In addition to the above, and showing further activities along these lines of expansion, are two incidents worthy of note:

First. On 19 January, 1921, it was learned that the naval authorities have decided to purchase a tract of land, about 80 acres, in Sunoki, Nagasaki Prefecture, on which they intend establishing a naval arsenal.

This is entirely independent of the Mitsubishi Torpedo Factory, referred to in November, 1920. It is believed that this new naval plant near Nagasaki is to be used for the manufacture of shells and mines.

Second. Recent rumors indicate that considerable expansion of the Yokosuka Navy Yard is being planned, and that when completed the present Yokosuka Arsenal will be abolished and the shops now used in this connection will be diverted to purely ship construction work.

This plan of expansion at Yokosuka may or may not have been the reason for the decision to establish an airplane and motor factory at Nagoya, reported in January, 1921, as well as the arsenal referred to above, near Nagasaki.

The whole subject is a far-sighted and well-laid plan of rearrangement of facilities and great expansion of plants, to be completed by a definite and fixed time; i. e., 1924.

JAPANESE ACTIVITIES IN SWITZERLAND.

(13479.)

Source: Reliable. **14 January, 1921.**

1. During the past year there have been in Switzerland a large number of Japanese naval commissions that have been in communication with various firms in Switzerland and who now have proceeded to Germany.

2. An interesting fact, for instance, is that the firm of Krupps have made proposals for the construction of new large submarine engines to the Japanese Navy, and probably also other German manufacturers of submarine engines are making the same proposals, which is evidence that German firms do not intend to suspend the construction of submarine engines, as required by the treaty. In one specific instance a contract for submarine engines which was going to be signed was postponed because at the last moment the German firm, Machine Fabrik, Augsburg, Nurenberg, very considerably underbid the Swiss firm.

3. In conversation with a Dutch officer, as well as with Japanese naval officers, on this subject the above stated that there was no difficulty in obtaining these submarine engines from the German manufacturers, notwithstanding the treaty, as there were many ways of getting around its provisions, one, in particular, being simply a change in the designation of the engine, instead of selling the type desired as a submarine engine, they are sold as "stationary engines."

4. Another way suggested by the Dutch naval officer was the manufacture of the engines in parts and their shipment to Holland and erection after arrival there. Is it known that Fischer & Co., of Schaffhausen, who makes castings for submarine engines, are making large numbers of parts and shipping them to Germany; for instance, to the "M. A. N.," Dautz, Daimler, and others.

A member of the Japanese commission stated laughingly that such orders could always be placed through a second party.

5. Two facts are certain: The Japanese Navy is buying large numbers of submarine engines in Switzerland and in Germany and is also building some in Japan, having purchasesd the licences to construct the latest types in Switzerland, Italy, and England. The other is that the Germans are making very large quantities of submarine engines in defiance of the treaty. About these two facts, there is no doubt.

6. There are stored in Holland, Spain, and possibly in other countries, a very large number of submarine engines which were shipped out of Germany in time to escape enumeration and control. In substantiation of this statement it is known that about 50 of these engines were offered to a Swiss firm at very low prices, and with the statement that they were suitable for any industrial purpose. This, of course, would simply indicate that Germany was trying to dispose of these engines, which perhaps is not illegitimate. It indicates, however, that Germany has at her disposal a large number of submarine engines over which the allied commission have no control.

TACTICS OF GERMAN FLEET—JUTLAND.

(14162.)

Source: Reliable. **2 February, 1921.**

Even though the maneuvers of the ships of the line was under the control of the commander in chief, the division commanders of the leading division of battleships, or battle cruisers, in the majority of cases were charged with the responsibility of making their own estimate of the situation during the progress of an engagement, and leaving the line in accordance with their best judgment.

In the Jutland battle the German Fleet went ship's "right-about" twice while under fire of the British Battle Fleet. This maneuver was carried out without "hitch" and without damage to any of the ships during the maneuver, owing to the fact that the small cruisers passed through the lines to the "engaged" side, and released "smoke-screens" from their smoke boxes, to cover the maneuvers of the fleet. It was reported, further, that this maneuver had been practised considerably in time of peace and that the complete change, of course, carried out by the fleet resulted in frustrating the English attempts to "cap" the German Fleet. Admiral Behncke, present chief of the Admirality and division commander of the leading German Battle Fleet division at Jutland, seriously considered breaking through the English line in the early part of the battleship engagement. Whether or not this maneuver would have been successful is open to serious doubt, and Admiral Behncke decided, finally, not to make the attempt, unless the condition of the battle fleet became much more critical than proved to be the case.

During the night engagement the German fire was claimed to have been even superior to the day action. The destruction of the old English cruiser the *Black Prince* during the night action was accomplished in the space of about five minutes, as given from the source above. It was stated further that the searchlights were trained with the guns, according to the German fire-control system, using a "Follow-the-pointer" system. The train was directed by the fire-control officer, who directed the periscope, which was electrically connected to the "Pointer" system (this was known as "Richtungs-weiser").

At the time of Jutland the searchlights were fitted with both Irish shutter and Venetian blind screen. At the command of "Light," the searchlights were flashed on the target. The searchlights were trained by "Follow-the-pointer" system, electrically arranged in such a manner that the parallax was corrected automatically by the electrical system. The elevation was controlled by the other operator at the searchlight, who was furnished with a telescope for keeping the light on the target in elevation.

The German searchlight-control system had a required accuracy of plus-minus 1 minute of arc. The system was developed and manufactured by a firm of Siemens-Halske, and from all reports is far superior to the English system, which was developed since Jutland.

JAPAN, NAVAL NOTES.

(13127.)

Source: Reliable. **3 March, 1921.**

The *Susuki*, 835-ton destroyer, was laid down in May, 1920, and launched (floated out of dock) 21 February, 1921, at Ishikawajima Shipyard, Tokyo.

The *Sumire*, building at same yard, was laid down in November, 1920.

The *Yamagi* is to be laid down as soon as the dry dock in which *Susuki* was built is prepared.

The *Susuki* has Brown-Curtis turbines with reduction gear. The turbines were built by Kawasaki Dockyard Co.

The S. H. P. developed by vessels of this class has varied between 25,000 and 27,000.

The fuel capacity is about 275 tons.

This class has three boilers, instead of four, as previously reported. Two are in the forward fireroom. It has been stated that they can cruise on one boiler, but it could not be learned how, under this condition, the dead boiler in forward fireroom is blanked off to maintain required air pressure. It was stated that there are no flap doors in the uptake.

All shell plating is galvanized, except the top strake at main deck, and above that strake at forecastle. All deck plating is galvanized.

The hull is of 7-pound plate, except garboard strake and top strake at main deck. These two strakes are of about 14-pound plate.

The riveting, calking, and general smoothness of hull (total absence of waves and depressions at frames) of *Susuki* show far better and more workmanship than is found in most of our own destroyers. Flush rivets are used throughout.

There are no outboard openings at any place in the hull for listening devices. There is no sea connection to the forward trimming tanks. There is one underwater opening forward and one aft, about abreast of where the magazines would naturally be located. Scoop injection is not used. The main injection is very near keel, cutting about 1 foot into the garboard strake. Tarred paper is used, instead of canvas, in making up most of the underwater outboard flanges.

The stern construction, where tail shafts are brought through skin of ship, is very simple; lines are smooth and continuous, due to stern and deadwood being cut away. The struts are of rather

unusual construction. Both webs are curved, especially so near the hull, so that they enter normal to the hull and almost perpendicular. The ship's bottom is almost flat at this point.

There is apparently very little drop in the shaft. The strut webs are therefore quite short. The diameter of the propellers is almost the same as that of our 742-ton destroyers with three-shaft installation, but the blade surface appeared to be considerably greater. The propellers are well outboard, and, owing to the wide beam at this point, are far apart. The rudder is small and well abaft the propellers. The balance section is almost negligible. Due to the size of the rudder, the distance abaft propellers, and the width between propellers, it is doubtful if propeller discharge has much effect upon the rudder. These boats should have most excellent maneuvering qualities.

The normal load draft is 8 feet.

In general appearance the boats are of lighter construction than our own. The stem casting is certainly much lighter. Also the lines are quite different. The fineness of the bow is extreme and it is carried well aft. Development is not begun until almost abreast of the break of the forecastle, just at the beginning of the bilge keel.

From here the development is rapid to the amidships section, where the bottom is quite flat. In this section there is a very perceptible bulge at the turn of the bilge and from there on a gradual drawing in of the sides up to the deck. The maximum beam is at the turn of the bilge. From the amidships section aft the side development is extremely slow. The bottom is gradually flattened and the draft slightly reduced until just forward of point where tail shaft enters hull, from where stern is rapidly cut away. The stern is slightly rounded, but almost square, and the beam aft nearly equal to that amidships. This permits the mine tracks to be carried almost straight forward on both sides of the after deck house (crew's wash room) with ample working space between the tracks.

Before painting, the hull, both under water and above water, is treated with a cement preparation that appears to be unusually satisfactory. No rust spots or streaks have been seen on any of their destroyers, either old or new.

A collision occurred between the destroyers *Hato* and *Aotaka* on 10 February in Omura Bay while maneuvering. The latter ship was badly damaged and was taken to Sasebo for repairs.

The transport *Mikuni Maru*, which was icebound, was rescued by the ice breaker *Baikal*. The mishap occurred off Notoro Point, near the northern extremity of Hokkaido.

The Nippon Yusen Kaisha is at a loss as to what disposition to make of the *Cap Finisterre*, ceded to Japan by Germany, and in consequence the Government has put her under the control of the Navy Department, who, it is understood, will convert her into a hospital ship.

The war office has decided to construct several large ice breakers, which will be used in maintaining communication with Saghalien in winter time. It is expected to complete them within the year, and it is proposed to construct them so they may be used also as transports.

The transfer of the Japanese naval and civil headquarters from Jaluit to Wotje is being made. Wotje is an island 4½ square miles in area, being 3 miles long and half as wide. It is the largest island of the group and forms the eastern end of a circular coral atoll of the same name, which incloses a 200 square mile lagoon, where the largest ships and submarines would be able to anchor in safety. Wotje lies some 220 miles north of Jaluit, in the center of the Marshall group.

Because naval volunteers from seacoast settlements are not sufficient to man the Japanese warships, volunteers will be sought in Tokio February 21 to 26.

A rather rare accident is reported as having occurred to the *Yahagi*, of the Second Flotilla, under Vice Admiral Saito the 20th, when a 21-inch fish torpedo discharged by the *Yahagi* turned around after having run some 300 meters and hit the *Yahagi's* propeller and exploded—probably air flask. No casualties are reported, except damage to screw.

Capt. Jiro Araki, I. J. N., has been appointed naval attaché to the Japanese Embassy in Berlin.

A warrant officer, with the aid of another seaman, beat up a student in the gunnery school when he failed to salute. The student died soon after from concussion of the brain.

Japan's immediate military activities are to be financed through the consent of leading banks and bankers of Japan to underwrite a Government loan amounting to 70,000,000 yen.

Japan Steel Works, of Muroran, discharged 880 employees 27 February because of lowered production.

The oil tanker *Sata* built by the Yokohama Dock Co., is now undergoing trials. Tankers of this class are designed to carry 8,000 tons of cargo oil. Their speeds are 15.3 knots light and 13.8 knots full load.

ITALIAN DESTROYERS UNDER CONSTRUCTION.

(7833.)

Source: Reliable. **29 January, 1921.**

Italy has the following destroyers under construction at the works of Orlando, at Leghorn: *Calatafini, Confienza, Monzambano, San Martino, Castelfidardo, Curtatone, Palestro, Solferino.*

Of these the *Curatone* and *Palestro* are completed and the *Solferino* is undergoing her trials. The remaining five will be completed at the rate of one every four months.

The general characteristics of these boats are as follows:

Displacement.....950 tons.
Speed.....32 knots.
Torpedo tubes.....4 double torpedo tubes.
Guns.....4 102-mm., 45-caliber, mounted in pairs (3.7-inch guns).

Four destroyers of the *Sirtori* class are under construction at the works of Odero, at Genoa.

These destroyers have not yet been named. It is proposed to give them names of Italian generals who were killed during the war.

Their general characteristics are as follows:

Displacement.....750 tons.
Speed.....32 knots.
Torpedo tubes.....2 triple 450-mm.
Guns.....4 102-mm., 45-caliber.

These four destroyers will not be completed until some time next year.

There are building at the works of Ansaldo, Genoa, three flotilla leaders: *Leone, Pantera, Tigre.*

They will not be completed until some time in 1922.

Their general characteristics are:

Displacement.....2,500 tons.
Speed.....35 knots.
Horsepower.....50,000 (?).
Torpedo tubes.....4 triple.
Guns.....4 120-mm., 45-caliber.
Twin screws, 2 turbine engines.

THE WHITE PERIL.

(11399.)

14 January, 1921.

A gentleman called Mr. Ninciko Hidaka has written a book entitled "White Peril and Japan's Future," in which he emphasizes the fact that the white people of Europe and America intend to persecute and are actually persecuting the yellow race. He calls this persecution "White Peril" and takes much pains to bring home to the Japanese the gravity of the situation. All persons having at heart the good of the country must appreciate his efforts, and it will not be difficult for them to see that such a thing as naval disarmament is difficult of realization.

Mr. Hidaka explains how the white persecution of Japan has driven her into a difficult international position and says that the ambitious countries of Europe and America will not be content until this country is squeezed into a tiny corner of the Far East. As evidence that they regard the alienation of Japan and China as most important for the realization of their aim, he quotes their propaganda that Japan is an unrepentant Germany in the Orient and that China should be assisted if democracy is to triumph.

Europeans and Americans regard the solidarity of the orientals, especially of the Japanese and Chinese, as the greatest obstacle in the way of their ambition of controlling the Orient, and they are plotting skillful machinations to alienate the Chinese from the Japanese. When this scheme has materialized will be the day when "White Peril" will have conquered the Orient.

TOMIOKA WIRELESS STATION NOW OPEN TO PUBLIC.

(12526.)

21 January, 1921.

The new wireless station at Tomioka, in Iwaki Prefecture (longitude 37° 20′ N., latitude 141° 5′ E., approximately), has been opened to the public.

This station was erected by the department of communications as a complementary station of the receiving station at Haranomachi, Iwaki Prefecture.

The station is purely a sending station and has a sending radius of 4,500 miles.

Messages received for transmission to the United States are sent by way of Hawaii.

The Japanese newspapers claim that this station is the largest in the world, but there are several which are known to be much larger than this one.

The installation of new apparatus in the Government's new wireless receiving station at Haranomachi, in Iwaki-ken, will be com-

pleted by the end of this month. This is expected to increase the receiving capacity of this station, now only 500 words a day, and to permit of receiving messages direct from New York, according to the wireless officials in charge of the station.

Trials of the new apparatus will be held as soon as the installation is completed. The Kokumin states that the apparatus now in use is old and that the new equipment will make the station one of the most powerful in the world.

EXPENDITURES FOR MILITARY OPERATIONS IN SIBERIA.

(9213.)

8 January, 1921.

The Asahi says from the outbreak of the war in 1914 up to 30 September this year the sum of over 406,000,000 yen has been allotted by Japan as expenditure required for military operations in Siberia. Of this total, 330,000,000 yen has already been spent.

As to extraordinary military expenses for the present fiscal year ending March 31, next, negotiations are now in progress between the military authorities and the central treasury. The paper learns from a trustworthy source that the sum of about 100,000,000 yen will be needed, including 50,000,000 yen for the maintenance of two divisions in Siberia and 30,000,000 yen for the transportation of troops to and from that region. It is further learned that 130 yen is needed for the maintenance and equipment of each soldier monthly and 10,000,000 yen for the transport of one division.

Whether a Japanese force should be sent to Nickolaievsk with the return of spring is at present uncertain, but if a regiment is sent there the sum of 20,000,000 yen will be appropriated.

The total sum allotted for Japan's military operations in connection with the European war and the Siberian campaign has reached 742,000,000 yen.

BRITISH OIL-FUEL STORAGES AT TORPOINT.

(6680.)

Source: Reliable. **23 February, 1921.**

The following extract from the Petroleum Times, issue 19 February, 1921, is quoted for the information of the department:

"ADMIRALTY OIL-FUEL STORAGES AT TORPOINT.

"The scheme to erect oil tanks for the Admiralty at Torpoint is being rapidly carried on, the ground on which the tanks will stand having been evacuated, while the soil and rock have been used to form high banks between the tanks, which will prevent flames spreading in case of fire. The site for the oil tanks is a rocky peninsula, sufficiently large to hold 28 tanks altogether. In time, the dividing

banks between the tanks will be covered with grass and later planted with ornamental trees. The concrete foundations of two of the top tanks are finished and the material for the first has been delivered. This has been a lengthy task as the plates (some of great size) had to be conveyed from Devonport station across the harbor in the ferry bridge. The work of building is to be commenced this week. The tanks will vary in height from 30 to 40 feet. The plates, which are prepared and ready for fixing, weigh from 4 to 35 hundredweight, and 230 tons of steel will be used in their construction. The lower part of the tanks will rest on solid steel props 2 feet 6 inches in height. The largest tanks will contain 2,250,000 gallons, while the smaller ones will hold 2,000,000 gallons, and when all are full, the total weight of oil will be 8,000 tons.

"The contract for the construction of the tanks is being carried out by the Motherwell Bridge Co., the Admiralty undertaking the laying out of the land and preparing for the tanks."

It may be stated that Torpoint is very near Devonport, England.

JAPANESE BATTLESHIPS.

(6797.)

Source: Reliable. **18 February, 1921.**

Four of the *Nagato's* torpedo tubes are on the gun deck and the other four submerged. The gun-deck tubes are equally divided on each broadside. They are forward of the secondary battery guns, and just abreast (possibly a little abaft) No. 2 turret. Six spare torpedoes are reported to be carried for these tubes.

The foremast has 8 stages instead of 13 and there are 6 legs, in addition to the central armored tube.

The turret face armor is 11 inches thick instead of 15 inches, as previously reported.

She also carried two small torpedo boats on deck, one on each side between No. 2 stack and the mainmast.

On trials she made a little better than 23.5 knots, but at some speeds (not known, and in fact not yet definitely determined by the the ship) the foremast vibrated so badly that it could not have been successfully used for fire-control purposes.

The *Nagato* carries approximately 100 rounds for each major caliber gun and 300 rounds for each secondary caliber gun.

The extra tonnage of the *Kaga* and *Tosa* is stated to be due to increased armor and fuel capacity, but not to additional 16-inch guns. The designed cruising radious for these two ships is reported to be 9,500 miles.

The Japanese Navy Department claims that the *Nagato's* cruising radius is 7,000 miles at 14 knots.

The fleet (major ships) cruise in formation at 11 to 12 knots.

THE FRENCH NAVAL BUDGET, 1921.

(13946.)

Source: Reliable. **24 February, 1921.**

After a three-months' hearing and investigation the naval affairs committee of the Chamber of Deputies on 15 February, 1921, reported back the naval budget with cuts bringing it from 1,518,300,278 francs, as originally submitted, to 1,083,843,746.

The cuts were made principally:

(*a*) By providing for the scrapping of many obsolete ships of all kinds which the navy was contemplating retaining. This does away with the cost of upkeep of such vessels.

(*b*) By disapproving the navy's application for more personnel. The budget as submitted was figured on a basis of about 57,000 men, whereas the normal basis to which the committee has brought it back is about 50,000 men.

NATIONAL DEBTS AND NATIONAL WEALTH OF LEADING COUNTRIES.

Country.	National debt (gross).	Date.	Source.
United States	$23,993,234,882.92	Jan. 31, 1921	United States Treasury daily statement.
United Kingdom	£7,831,000,000.00	Jan. 8, 1921	London Economist, Jan. 15, 1921.
France	$45,109,697,000.00	July, 1920	Federal Reserve Bulletin, December, 1920.
Italy	$16,104,846,000.00	Dec. 31, 1920	Bank of Italy report on the condition of circulation and the money market, 1920.
Japan	$1,300,000,000.00		Americas, June, 1920.
Russia	$25,000,000,000.00	1917	Do.

Country.	National wealth.	Date.	Source.
United States	$350,000,000,000	June, 1920	Edgar Crammond before Bankers' Institute, London.
United Kingdom	120,000,000,000	do	Do.
France	92,500,000,000	do	Do.
Italy	35,500,000,000	do	Do.
Japan	23,500,000,000	do	Do.
Russia	60,000,000,000		Commerce and Finance, May 26, 1920.

The above is the latest compilation of national debts and national wealth of the leading countries, Office of Naval Intelligence, 12 February, 1921.

JAPANESE ACTIVITIES IN GERMANY.

(7010.)

Source: Reliable. **24 January, 1921.**

It has been definitely determined that optical glass sufficient for the needs of the Japanese Navy for four years has been purchased by Japanese agents in Germany. This glass was of the kind used for range finders, periscopes, and for mirrors. Some of the glass was delivered six months ago. It has not yet been definitely determined whether or not this glass was purchased by the agents of the Japanese Government or by the firm of Nippon Kogya Ku.

It has been definitely determined that one of the engineers of the Germania Werft in Kiel who has been employed for some years in the

design and construction of Diesel engines has accepted a position with the Japanese Government in connection with the construction of Diesels by Mitsui & Co.

GERMAN MECHANICS, ETC., ARRIVING AT YOKOHAMA, JANUARY 22, 1921.

(12164.)

Source: Reliable. **8 February, 1921.**

The following persons arrived at Yokohama on 22 January, 1921, on the S. S. *Pilsna* from Trieste:

1. Nine mechanical engineers from Krupp's Engine Works at Essen. It is reported that these men are airplane and submarine engine experts and are to work for the Tokyo Gas & Electric Co. in the Omori plant, making airplane and submarine engines, eight of them three-year contracts, and one, the supervising engineer, an indefinite contract.

2. One assembling engineer for Escher, Wyss & Co., of Zurich, Switzerland.

3. A director, a manager, and a secretary of the Seimen-Schukart Electrical Co., of Berlin, who are opening a branch in Tokyo.

RECONSTRUCTION OF FORTRESSES.

(12668.)

Source: Translation from the "Jiji," 28 December, 1920.

In accordance with the fortress reconstruction scheme passed by the Diet in its last session (1920), the reconstruction of the fortresses at Uraga (near Yokosuka), Kada, and Yura (southern entrance to Kobe Harbor), and Imabari (latitude 34° N., longitude 133° E.) is in progress.

It is reported that a new fortress will also be constructed in the Loochu and Bonin Islands, respectively, thus completing the first defensive lines on the Pacific. The preliminary land survey has been completed and the work will be taken in hand early in April, 1921.

JAPAN, NAVAL BASES AND YARDS.

(3958.)

Source: Reliable. **3 March, 1921.**

It is said that the naval fuel oil problem is becoming very serious and that the Navy Department is quite agitated over it. He said that in the near future there will be sufficient tankers to meet all their needs but that the source of supply is the real problem to be solved. The Navy Department's investigation of North Saghalien, it is said, has shown that the great quantity of oil reported there has

proven to be mostly rumor and newspaper talk. The restriction preventing Japan from obtaining oil in the United States has placed the navy in an embarrassing position and that this act is generally considered a discrimination against Japan.

A member of the Diet recently told an American oil representative that the "Government oil monopoly bill, previously referred to in numerous reports, would probably not be brought before the Diet this year because the Diet has so much work now in hand that the bill could not be given proper consideration or finally disposed of. It is said that the agreement provided that the Hoden Oil Co. should increase its capitalization to equal that of the Nippon Oil Co., and that in the final settlement each of these private companies would be given 40 per cent of the stock and the Government would retain 20 per cent of the stock.

BRITISH GOVERNMENT TO SEND ARMY OFFICERS TO CHILE.

(12557.)

Source: Reliable. **18 February, 1921.**

The British Government through its minister in Chile, Mr. Vaughn, has offered to send to Chile three distinquished officers of experience in the late war to serve in the Army of Chile in the capacity of commanders. The Government of Chile has accepted this offer and promises to give every facility to these officers to accomplish their mission.

This is a noticeable move, as it indicates that there will be a change from the German influence that up to now has dominated the Army of Chile.

GERMANY—INDUSTRIAL—INDUSTRIES—MANUFACTURING.

(11790.)

Source: Reliable. **3 January, 1921.**

Information received from an engineer of the Krupp Works at Essen indicates that 48,000 workmen are employed at the present time there and are manufacturing locomotive engines, motor trucks, typewriters, cash registers, centrifugal separators, etc. House furniture is also being made, but only for use of the Krupp employees.

ITALIAN NAVAL BUDGET 1921-22.

(14053.)

Source: Reliable. **16 February, 1921.**

The following is the Italian naval budget for 1921–22:

For maintenance of the navy, 420,045,300 lire, 7,000,000 of which is for aviation. For new naval construction, 50,000,000 lire.

This budget has been submitted to Parliament by the Navy Department, but has not yet been approved by Parliament.

CASUALTIES IN FRENCH NAVY DURING WORLD WAR.

Source: Reliable (French Ministry of Marine).

Officers killed in action	298
Officers died from wounds	23
Officers wounded (statistics not made up).	
Officers died from miscellaneous causes	168
Enlisted men killed in action	11,108
Enlisted wounded (approximately)	7,500
Enlisted, died from miscellaneous causes (statistics not made up).	

JAPANESE LIGHT CRUISERS.

Source: Reliable.

(9284.)

18 February, 1921.

The light cruiser *Tama*, 5,500 tons, laid down in August, 1918, at Mitsubishi, Nagasaki, and launched February, 1920, was completed and turned over to the navy department on 29 January, 1921.

The light cruiser *Kinu*, tonnage reported as 7,000, was laid down at Kawasaki Dockyard, Kobe, on 17 January, 1921.

The light cruiser *Oi*, built at Kawasaki Dockyard, has been indefinitely delayed, awaiting the manufacture and installation of new turbines.

JAPAN, BATTLE CRUISERS.

Source: Reliable.

(754.)

3 March, 1921.

The magazine arrangement in the *Kongo* and her class has not be altered as a result of experience gained from the Jutland fight. The navy department considered the cost of alteration too great for the benefit gained thereby.

The tonnage of the new battle cruisers, *Amagi* class, is now pretty definitely stated to be 44,000.

OPERATIONS.

Design of Battleships.

2 February, 1921.

In compliance with the letter of the Secretary of the Navy, dated 22 January, 1921, the General Board has carefully considered the question of design in construction of battleships and of their value in the composition of the fleet.

For 20 years the General Board has been charged with the duty of recommending to the Navy Department the proper types of ships for the Navy each in due proportion. Particularly, since the close of the recent war activities more than two years ago, the General Board has devoted itself to a study of changes proper to adopt in the composition of the fleet in view of the experience of four years of war. The important facts regarding the naval operations of the war are already generally known and further delay of six months or any other period for the study of types of ships is neither necessary nor advisable.

Concentration of Power Is Sound Tactics.

Concentration of power in attack is the fundamental basis of all warlike operations, ashore and afloat, naval concentration of power has been in the main fighting ships of a fleet from the ancient galley period to the present time and the strength of navies has always been based upon the number and power of its ships of the fighting line; that is, of its battleships.

Types change as advances is made in the mechanical arts and sciences and in invention; but the general principle of concentration of power in ships that can take and keep the sea at all times and in all weathers, that can deliver and receive the heaviest blows, and that can overcome the strongest ships that may be brought against them will continue as long as navies exist. The rapid progress during the last half century in naval construction and maritime inventions, in motive power, ordnance and armor, in torpedoes, explosives, and accessories has so increased the power and consequent cost of battleships as to make their acquisition and maintenance a financial burden of first importance to any nation, however rich. Naturally, any scheme, proposition, or invention which appears to offer a less expensive, shorter road to victory is most attractive and generally finds enthusiastic supporters.

Surprise, Ruse, and Stratagem vs. Knockout Blows.

It will be found, on analysis, that the arguments against the expensive capital ship are based upon the old fallacy that war can be cheaply won by hitting, dodging, and running. This belief is usually advanced by the weaker opponent, who endeavors to substitute surprise, ruse, and stratagem for powerful knockout blows. At times it influences stronger nations who see, or hope they see, some short and more economical road to success, due to new inventions, than that afforded by the slower, normal advance in naval methods and material.

Time and again the naval policy of maritime nations has been influenced by these arguments. Reliance upon speed and commerce destroying had its day until it became evident that speed without punch was insufficient to win a war.

In the early eighties, when the automobile torpedo began to develop as a weapon of fair accuracy, the immediate doom of the battleship was prophesied. A single torpedo launched from a boat costing less than $100,000 was to destroy a battleship costing millions. The answer to this soon came in increased underwater protection, torpedo-defense batteries, and in the larger, faster, better-armed, and more costly torpedo-boat destroyer, which drove in the auxiliary forces of the fleet at enhanced cost to its construction and maintenance.

Much was expected in the late war of large, fast, well-drilled squadrons of torpedo-boat destroyers that would launch a flock of torpedoes against the capital ships in battle formation with fatal effect. At the battle of Jutland, when these tactics were tried out, they failed.

Several ships were hit but not destroyed. The British battleship *Marlborough*, after being torpedoed, remained in the line and got safely back to port. The German ship *Seydlitz* had the same experience. Only one ship, of an older type, the *Pommern*, is reported to have been sunk, and that at night and after the battle. Nothing was accomplished in the battle in the way of destruction of capital ships by torpedoes, though great numbers were launched. Destroyer met destroyer, light cruiser, light cruiser, and the battleships held their place in the line. The most serious damage to the ships in this battle was due to the great gun.

The fast light cruiser, raider, commerce destroyer, were again tried out in the World War. The Von Spee Squadron, the *Emden*, and a few other vessels of similar types brought a certain amount of distinction to the German Navy; but as the German Battle Fleet could not support them they eventually succumbed to superior British force which commanded the sea. Speed and dodging again failed.

To-day the opponents of the battleship are basing their arguments upon the present and prospective, especially the prospective, development of submarines and aircraft. It is the old battle of words over again, like that of the torpedo against the big ship, the gun against armor, speed against concentrated fighting power. We are asked to accept hopes for accomplishment.

During the late war the submarine, a new weapon never before tried in war, received enormous development. Its employment against certain types of vessels, particularly slow, unprotected merchant vessels, was entirely unexpected. The submarine is the most successful weapon in its qualities of concealment and surprise yet advanced. It came very near winning the war for Germany. But, as always, necessity and invention combined found means to meet the menace and reduce it to controllable limits.

The successful employment of the destroyer and other speedy vessels with their depth bombs, the motor boat with its listening devices, submarine against submarine, developed a defense against submarine attack to a point where it was successfully met. It took a long time, but, again, surprise and dodging failed.

The capital ship survived this, perhaps the most serious danger to which it has yet been exposed, and further improvements in underwater protection as well as in other ways have greatly minimized it. As a matter of fact, throughout the war, though the cruising ground of the Grand Fleet was infested by submarines, eventually brought to a high state of perfection by the Germans, not a single battleship of that fleet was sunk or even very seriously injured by submarine attack. The protective measures accepted were successful and the Grand Fleet frequently traversed the North Sea and adjacent waters unharmed and at will. There is no reason to believe that the defense along these lines will not continue to keep pace with the offense.

Aviation.

Finally come the bomb and torpedo-carrying aircraft to contest the supremacy of the capital ship as well as of all surface vessels. Great things, not yet accomplished, are predicted by the inventors and enthusiastic supporters of these new weapons, yet, if past experience has any value, it may be as confidently predicted that equally fertile invention will provide means for meeting the future development of these weapons, and that they, like their dangerous predecessors, will continue to be only adjuncts of the fleet. Already aircraft have been successfully employed in war against aircraft.

No one can foretell what the developments in aviation may bring in the modification of present accepted types of surface vessels, but it may be confidently asserted that changes of type due to this influence will be slow and will not seriously affect the value of the ships now built or to be built in the near future.

Changes in military characteristics of battle and other surface ships are frequent in these days of progress in invention, but no revolutionary change is to be expected. Secrecy as to basic characteristics can not be maintained and means of defense move in parallel lines and at about equal speed with those of offense.

The unlikely *may* happen and the protective measures and devices needed for the survival of the capital ship *may* outweigh and overshadow the value of such ships as primary weapons. Before such a condition is reached, however, the new weapons now under trial will have to attain a general efficiency far in excess of anything they now possess. Predictions are one thing, actualities are another. It would be the height of unwisdom for any nation possessing sea power to pin its faith and change its practice upon mere theories as to the future development of new and untried weapons. As yet the protected gun is the most generally effective weapon in existence for naval use. But that fact does not relieve us of the necessity of developing to the utmost new weapons and inventions as rapidly as possible.

At the present time the defense of surface ships against aircraft attack, whether by bombs or torpedoes, seems fairly well solved. It consists mainly in meeting aircraft with aircraft. The limitations of aircraft are such that there is no reason why both sides, properly prepared, should not have aircraft at hand when the time and place for their use arises. Victory in the air will then depend upon the greater efficiency in personnel and material in the air service. Hence the need for immediate training and preparation in aviation.

Aviation development over the land has progressed far more than over the water. The difficulties of the effective use of aircraft over water against ships are incomparably greater. During the war the damage to surface vessels from aircraft was practically negligible. It is easy to lay a bomb on the deck of a ship, explode it from a safe place, and then exclaim in wonder at the damage it has caused. But it is a very different matter to place that same bomb from the air when under gunfire or attack from other planes.

The same is true of the torpedo launched from aircraft. The characteristic weaknesses of the torpedo under the necessary conditions of operation make a hit from the air difficult under the best of conditions, but, conceding that it can be done, tests under peace conditions must of necessity be inconclusive as to actual performance under war conditions.

There is no doubt, however, that the future employment of aircraft in connection with naval operations will introduce new problems of attack and defense of far-reaching importance. They will become increasingly valuable adjuncts of the fleet.

The General Board, in its annual report, dated September 24, 1920, stated as follows:

"It is not too much to say that the influence of seaplanes upon scouting and information gathering duties may revolutionize former naval practice along these lines, though the General Board does not believe that the necessity for surface vessels of the scout or cruiser type will be in any great degree impaired by the use of aircraft as information gatherers.

"Surface vessels will always be needed for use under weather and other conditions when aircraft could not be employed—for the patrol of sea routes, the protection of lines of communication, escort of convoys, screens for fleets, and numerous other duties for which aircraft are not suited.

"Airplane carriers are a development of the war. They are to carry airplanes in considerable numbers from which aircraft may fly and return as to a base. Such vessels should be considered as an absolutely essential type in a modern fleet. For the United States Navy they are urgently needed for training the air and the fleet personnel in the use of aircraft in connection with fleet organization and operations."

Composition of the Modern Fleet.

The composition of a war fleet is becoming more and more complex. It follows the law of increase in size and cost as do all great modern organizations. But the principle is the same now as in the days of Nelson and before. Ships of different types had to be provided for the duties which the state of naval warfare then demanded.

Hence, the ship of the line (battleship), in which the main reliance was placed for the destruction of enemy sea power. Frigates, sloops, and smaller craft were provided for information gathering, blockading, ocean patrol, convoying, commerce destroying, and the clearing of the seas of enemy craft of similar types, besides store and supply ships for fleet maintenance.

To-day the fleet organization is still based upon the great fighting ships with such auxiliaries as modern progress has made necessary for the prosecution of naval warfare. As new weapons have been invented or old ones have been increased in power means have been found to meet them. The defense has kept pace with the offense, and victory depends, as before, upon efficient organization, the number and power of the fighting ships, and upon the training and effectiveness of the personnel.

The Battleship—The Basis of Sea Power.

Comment has been made from time to time in the press and elsewhere upon the comparatively little actual fighting done in the late war by the battleship fleets and the conclusion has been drawn that

because of their apparent inactivity they were of no use and could be dispensed with. The important service which they performed was neither generally understood nor appreciated. In reality it was upon the potential fighting power of these ships that the activities of all other naval craft was based. Throughout the war it was the Grand Fleet at Scapa Flow or thereabouts which controlled the movements of the enemy ships. It was the sea power vested and latent in the battleships which exercised the pressure upon the enemy which kept the sea routes open to the Allies and kept the German High Sea Fleet in its defended harbors until the morale of its personnel was sapped and the offensive power of that fleet destroyed by inaction.

Fleet and Army Organization Compared.

In the organization and operation of an army, main dependence is placed upon the slow-moving but potentially powerful infantry. Upon it is based the activities of all subsidiary branches of the service—artillery, cavalry, engineers, aircraft—all. Its masses may and generally do lie well behind the advance lines and not until the necessary preparations have been made by the advanced forces which it supports or the movements of the enemy's infantry or other conditions make it necessary or advisable does it advance to give battle. Upon the size and fighting power of the great masses depends victory or defeat.

Similar conditions obtain in the organization and operations of a fleet. The battleship fleet represents the infantry masses in which reside the final and decisive fighting power. The cruisers and destroyers, the submarines and aircraft, all the various subsidiary forces, like those of the army, base their activities upon the battle fleet, which, when the time is opportune, exerts its full power upon the enemy. Similar types will meet similar types, but it is upon the most powerful type of all, the battleship, that the decision will depend.

The Battleship Paramount.

The General Board in its annual report dated September 24, 1920, stated as follows:

"Nothing that occurred during the World War has served to change the opinion of the General Board as to the vital importance in war of the battleship, the ship that can at once give and take heavy blows."

Numerous citations in support of this position might be made from the most distinguished fleet commanders and other experienced officers of the late war. But perhaps it will suffice to quote the

British naval opinion as contained in the statement of the First Lord of the Admiralty explanatory of the navy estimates, 1920–21, when presented to Parliament.

Remarks on the Capital Ship.

"There has been some criticism of the maintenance in commission of the present type of vessels, especially in regard to the capital ship. A contrary policy has been openly advocated, this policy being based, it is presumed, on the idea that the battleship is dead and that submersible and air vessels are the types of the future. The naval staff has examined this question with extreme care, and as a result we profoundly dissent from these views.

"In our opinion the capital ship remains the unit on which sea power is built up.

"So far from the late war having shown that the capital ship is doomed, it has, on the contrary, proved the necessity for that type. On the German side the whole of the submarine campaign against merchant vessels was built up on the power of the High Sea Fleet. On the British side the enemy submarines in no way interfered with the movements of capital ships in carrying out operations; destroyer screens, new methods of attack, and altered tactical movements defeated the submarine.

"Nor at present could the Board of Admiralty subscribe to the statement that aircraft have doomed the capital ship. Aircraft are certainly of the highest importance in naval tactics as regards reconnaissance, torpedo attacks, and artillery observation, but their rôle in present circumstances is that of an auxiliary and not of a substitute for the capital ship. The past history of this question must be taken into account; many times has the doom of the battleship been pronounced. The introduction of torpedo craft was believed in certain quarters over 20 years ago to have settled its fate. The Board of Admiralty at the time refused to be carried away by the attractiveness of the idea of building small, cheap torpedo craft instead of battleships, and they proved to be right. History has shown that the introduction of a type to destroy the capital ship has been quickly followed by the evolution of countermeasures which sustain its power.

"We therefore believe that the battleship must remain the principal unit and that the fleet tactics and tactical training must be carried out with the battle squadron as the main unit. Nevertheless, it must be emphasized that although the battleship remains, its type may require to be altered. Advances in electricity, in the internal-combustion engine, and in science generally will inevitably necessitate an eventual change of type, and it is one of the principal

functions of the naval staff to keep continuous watch on scientific development, with the object of insuring that the type of capital ship design meets the requirements of the future. It is even possible that the present battleship will change to one of semisubmersible type, or even of a flying type, but such types are visions of the far future, not practical propositions of the moment.

"By gradual evolution and development the types forecasted may arrive, but the immediate abandonment of the capital ship in favor of a visionary scheme of aircraft and submarines would leave the British nation destitute of sea power and without the means of progressive training."

Certainly there is nothing in that statement, representing the best professional opinion of responsible authority in Great Britain, which throws any doubt upon the value of the battleship.

"We therefore believe that the battleship must remain the principal unit."

The statement recognizes that the advance in science generally may require an eventual change of type and that continuous watch on scientific development must be exercised, but there is nowhere any indication that such changes will occur except by "gradual evolution and development." This gradual evolution and development in types has been going on steadily. The battleship of 1920 is a very different creation from that of 1900.

Especial attention is invited to the concluding sentences of the statement, as follows:

"It is even possible that the present battleship will change to one of a semisubmersible type, or even of a flying type, but such types are visions of the far future, not practical propositions of the moment. By gradual evolution and development the types forecasted may arrive, but the immediate abandonment of the capital ship in favor of a visionary scheme of aircraft and submarines would leave the British nation destitute of sea power and without the means of progressive training."

Much has been made in the public press and elsewhere of the fact that the British Government is not at present building any capital ships. The conclusion is frequently drawn that this cessation is due to doubts as to the efficiency of that type, that the battleship is dead, and so forth. Nothing in the above-quoted statement by the First Lord of the Admiralty indicates any such belief. Probably the reasons may be found in the economic situation and to the fact that the British Navy, being now far superior in numbers and power to that of any other, can afford to wait *until financial conditions have improved.*

Policy of Equality in Sea Power.

The United States naval building program since 1903 has consistently tended toward equality of sea power with the strongest. It has been directed against no nation or group of nations. Its continuation has been solely on the ground of national safety.

The great merchant fleet that we are now making every effort to create and establish renders more necessary than ever a powerful navy for its protection. In all history it will be found that no nation has ever been able to establish and maintain a large merchant marine without a corresponding navy to assist and protect it.

The building program authorized in 1916 will, if completed, give us for the first time in the nation's history substantial equality in power, if not in number of ships, for our battle fleet.

In urging that this equality in power be the continuing naval policy of the United States there is no thought of instituting international competitive building. No other nation can in reason take exception to such a position. In assuming it the United States threatens no other nation or nations by the mere act of placing itself on an equality with the strongest. It can not be justly construed as a challenge. There is no good reason why the United States should not enjoy the trust of other nations to the same extent as she is expected to repose trust in them. A policy of equal or substantially equal armaments may well tend to diminish their growth and lessen the danger of sudden war.

The General Board, having kept in touch with naval progress along all lines, reiterates its belief in the battleships as forming the principal units of the fleet. Without them the United States can not hope to cope with existing navies. The board strongly urges that the policy which has characterized our building program since 1903 of eventually creating a navy equal to the strongest be continued and that no rest period or limitation of armament be agreed to which will modify the authorized building program of 1916, in numbers, general types, and date of completion. The ships recommended in that program are thoroughly modern and there is no reason to believe that the developments in submarine and air warfare will seriously detract from their value for many years to come.

The completion of that program should not deter us from developing to the utmost new or partly developed weapons; that is, submarines, aircraft, and aircraft carriers, and from making such additions to the fleet as will enable us successfully to develop and use surface, subsurface, and air methods of warfare to the best possible advantage should the necessity ever arise. In the future, as at all times previous to the World War, we shall, in all probability, have to rely solely upon our state of preparedness.—CHARLES J. BADGER.

EXTRACTS FROM THE OFFICIAL REPORTS OF FLAG OFFICERS AND COMMANDING OFFICERS OF THE GRAND FLEET ON THE BATTLE OF JUTLAND.

Source: Lieut. Commander H. H. Frost, U. S. Navy.

In this, and subsequent issues of the BULLETIN, extracts from the British official reports will be published under the following parts:

Part I.—Battleships.
Part II.—Battle cruisers.
Part III.—Cruisers.
Part IV.—Light cruisers.
Part V.—Destroyers and destroyer leaders.
Part VI. Aircraft.

These extracts will be further divided under the following sections:

Section A.—Gunnery.
Section B.—Torpedo fire.
Section C.—Engineering.
Section D.—Communications.
Section E.—Miscellaneous.

The extracts have been selected and arranged by Lieut. Commander H. H. Frost, U. S. Navy.

Part I.—Battleships. Section A.—Gunnery.

"Iron Duke"—Capt. F. C. Dreyer.

1. 6.23 p. m.—Opened fire with the turrets on the 3-funneled cruiser. Bearing about 80° Greenwich; range, 11,000. Fall of shot very easy to observe. The third salvo straddled. After the fourth salvo, ceased fire.

2. 6.30½ p. m.—Opened fire on a battleship of *König* class. Bearing 70° Greenwich; range, 12,000. The second, third, and fourth salvos hitting her, with a total of at least 6 hits. Enemy steaming in the same direction as *Iron Duke* on a slightly converging course.

3. 6.33 p. m.—Course S. 71° E. 17 knots. The bearing of the enemy was now S. 14° W. The bearing of the sun was N. 54° W. The enemy was lit up by the sun, whereas *Iron Duke* was probably invisible to them in the mist. However that may be, the *König* battleship did not return *Iron Duke's* fire, although heavily hit. Nine salvos, comprising a total of 43 rounds, were fired at her in 4 minutes 50 seconds.

4. 7.11 p. m.—6-inch opened fire on enemy torpedo-boat destroyer's attacking the Battle Fleet. Greenwich, 63°. About 10,000 yards, and sank one enemy torpedo boat destroyer and fired on another.

5. 7.13 p. m.—Opened fire with turrets on enemy battleship, Greenwich, 74°. Range, 15,400 yards. Enemy steaming nearly directly away. Four salvos fired; no hits were observed.

6. 7.18 p. m.—Ceased fire as enemy was hidden by a very good smoke screen made by his destroyers.

7. 7.20 p. m.—Trained turrets on enemy battle cruiser bearing 99° Greenwich, but before fire could be opened she also was hidden by a smoke screen made by attending enemy's torpedo-boat destroyers.

8. At 7.24 p. m.—6-inch opened fire on enemy's torpedo-boat destroyer's attacking Battle Fleet. Greenwich, 115°. Range, 10,000.

9. At 7.27 p. m.—Turrets opened fire, Greenwich, 110°, range, 9,600 yards, on enemy's torpedo-boat destroyers, which were attacking the Battle Fleet. One salvo fired, which the director gunner states blew up an enemy torpedo-boat destroyer.

10. Total ammunition fired—13.5-inch, 90 rounds; 6-inch, 50 rounds.

11. During the night, in view of the proximity of heavy enemy's ships, the hands remained at action stations, the guns' crews at their guns, but being allowed to sleep in turn.

12. The turrets were fired throughout by director, which system possesses enormous advantages over any other in action.

13. The range finders obtained very good results, notwithstanding the bad light, and were of the greatest assistance in keeping the range. The range takers reported that the enemy's pole masts were easier to range on than those of our own ships.

"Iron Duke"—Gunner F. W. Potter.

14. About six hits were obtained in the vicinity of "A" and "B" turrets, one salvo causing a big fire on the fore part of the ship. The last salvo fired was a straddle short, as I distinctly saw one shot hit the ship's side and explode.

15. I then received the order to train Greenwich 110° a destroyer, followed by the order "Greenwich 120°, a destroyer." After ranging for a few moments, the order "Open fire" was given. The only salvo was a straddle short. When the splash cleared, the destroyer had disappeared altogether.

16. The fleet now deployed to starboard, and I received orders to stand by to fire at the Zeppelin.

17. The director was trained and layed on to the Zeppelin, but, unfortunately, the smoke from our own funnels continually obscured her. Also a hoist of flags blew right across the telescope.

"Iron Duke"—Gunner H. D. Jehan.

18. A destroyer attack was observed coming toward the fleet, starboard bow.

19. The order was given by the captain from conning tower, "Destroyer 63° Greenwich; open fire when ready."

20. The guns were given the bearing of the leading destroyer at an estimated range of 10,000 yards, and 600 closing. Fire was opened by salvos; first salvo was over and out for line. This was

corrected * * * , the next salvo being short, and the third salvo straddled. The fourth hit the destroyer, which appeared to stagger, and independent was ordered. No less than four hits were observed, and the destroyer sank.

21. The 6-inch were ordered to check fire and shift to another destroyer, bearing 84° Greenwich, range 9,000. This destroyer appeared to be hit once by the 6-inch, but not disabled, and turned away. Range increased rapidly to extreme gun range, and the 6-inch were ordered to check fire.

22. The second attack came from aft. The order given by the captain from the conning tower was: "Destroyers 135° Greenwich; open fire when ready." This was passed to battery and 10,000 put on the sights, "Salvos commence" being ordered. The guns appeared to be a long time before opening fire. One gun fired, and I could not see the fall of shot.

23. A check bearing was given 115° Greenwich, and it appeared to me as if the after guns were on the second destroyer and the foremost guns on the leading destroyer.

24. I did not check fire, as I thought it would be waste of time.

25. It was most difficult to spot through the firing of the ships.

26. Transmitting station reported that range went as low as 7,600 to extreme 12,000.

27. During the first attack spotting was fairly easy, but during the second it was most difficult.

First Battle Squadron—Vice Admiral Cecil Burney.

28. A salvo of five shots fell ahead of the *Hercules* about 6.15 p. m. As the battle cruisers drew ahead and their smoke cleared, the German line could be more easily seen, and four *Kaisers* and four *Helgolands* could be dimly made out. *Marlborough* opened fire at 6.17 p. m. at a battleship of the *Kaiser* class; range, about 13,000 yards; about Greenwich 110°.

29. *Marlborough* fired seven salvos, and hits were observed in fifth and seventh salvos, the remainder of the squadron opening fire as a target became visible.

30. Owing to the haze and the enemy's smoke, organized distribution of fire was out of the question; individual ships selected their own targets.

31. *Marlborough* then engaged a ship of the *König* class, firing 14 salvos. Distinct hits were seen in four salvos. (The gunnery difficulties experienced by the ship after she was torpedoed are reported in the ship's gunnery report.) This ship finally turned out of the line, very low in the water aft, and was apparently sinking. A destroyer was observed to place herself on her engaged side and make a dense smoke in order to screen her.

32. As far as I could judge, the whole squadron opened fire on the attacking destroyers with the whole of the secondary and some of the main armament, and the attack was checked, and they turned away, but not before they were able to fire some of their torpedoes, which, however, were avoided.

33. Two of the enemy's destroyers were observed to be hit by *Marlborough's* 6-inch gunfire alone, and there must have been others, as the fire was so intense.

34. During the action at one period the enemy appeared to be firing steady, well-drilled salvos by some form of director, such as the Petravic system, but their range finding and range keeping appear to have been at fault when they were hit, although the firing on our armored cruisers was remarkable for its accuracy.

35. Many of their salvos were seen to fall over, and it was not till late in the action that they apparently found the range, when the *Colossus* was straddled by four successive salvos, correct for elevation.

36. As the action progressed their fire became more feeble. A certain number of shell of 4-inch or 6-inch caliber were seen to burst on the water just short of *Marlborough* and other ships of the First Battle Squadron, some leaving a cloud of light-green vapor and others a heavy gray vapor which spread over the surface of the water.

37. Shortly after arriving in *Revenge* a Zeppelin was sighted, evidently scouting. Fire was opened on her, which caused her to dip, and she quickly disappeared. She looked a remarkably easy target if shrapnel had been available.

38. The following ammunition was fired by the First Battle Squadron:

	Main armament.	Secondary armament.	Torpedoes.
Marlborough	162	60	2
Revenge	102	87	1
Hercules	98	.....	.....
Agincourt	144	111	.....
Colossus	93	16	.....
Collingwood	84	35	.....
Neptune	48	48	.....
St. Vincent	98	.....	.....
	829	357	3

"Marlborough"—Gunner's report.

39. Right gun of "A" turret had inner "A" tube and jacket cracked, a large portion of jacket being broken off. This occurred about the fifth round fired by this gun, and it is considered that a premature must have occurred, although the damage to the rifling is comparatively small. A. P. lyddite was being fired.

40. After the ship was struck by a mine or torpedo it took up a list of about 7° to starboard. Due to this list, difficulty was experienced in all turrets due to shell slipping forward as it rolled out of main cage into waiting position and fouling driving band with shell brake. Four turrets had to unship brake.

41. Controlled from foretop; firing by director. No difficulty was experienced in distinguishing own shots or in spotting overs or shorts, and hits could be easily distinguished by a deep red flame and clouds of gray and white smoke; occasionally, when shell burst well inside ship, no flame could be seen, but only a large amount of grayish smoke.

42. Without the director it would have been almost impossible to keep gun layers on correct object; there was so much confusion amongst enemy's ships, one ship was passing another; smoke from cruisers on fire often obliterated the object; own ship was continually altering course small amounts; the above made it difficult to keep on the same object for any length of time.

43. 6.54.—*Marlborough* was hit by a torpedo or mine in Diesel engine room. The shock was sufficient to shake off switches on lever power board and some fuses in telephone circuits. These were very quickly replaced, and all control instruments were found to be in step.

44. 7.3.—Opened fire. Fired four salvos in two minutes. The third and fourth both hit and appeared to open up her side, as a deep red flame could be seen inside her hull.

45. 7.5.—Cease fire as she appeared completely disabled and sinking fast.

46. 7.6.—Object shifted, a battleship, two funnels widely separated, left-hand ship of three (*Markgraf* class). Range by R. F., 10,750.

47. 7.12.—Opened fire. Fired 14 salvos in 6 minutes. The sixth, twelfth, thirteenth, and fourteenth were all distinct hits. In the sixth salvo a large cloud of gray and white smoke appeared near the foremast. In the twelfth salvo two hits could be clearly seen under bridge and rather low.

48. At about 4 a. m. a lot of firing could be heard to the southward, and shortly after a Zeppelin was sighted crossing astern and steering approximately east. Three-inch H. A. gun opened fire and fired 12 rounds. "X" and "Y" turrets opened fire with A. P. shell, which was already in the guns, and two rounds of common, which was in G. L. cage. Four rounds were fired. The nose of the Zeppelin was observed to dip very suddenly at one period, but it could not be ascertained for certain whether she was hit. Range varied between 5,000 and 10,000 yards.

"Hercules"—Capt. L. Clinton Baker.

49. At 5.55 p. m. our battle cruisers were sighted on starboard bow, through the mist, in action. Range of *Tiger*, 11,000 yards. Enemy's

shots were falling occasionally between our battle cruisers and our Battle Fleet and shortly afterwards appeared to hit *Tiger*.

50. At 6 p. m. our battle cruisers began to draw across our bows from starboard to port, the *Lion* being slightly on fire on her forecastle, port side.

51. 6.15 p. m.—As *Hercules* started to deploy, a salvo, with a small spread, of some five shots straddled our forecastle and deluged the forebridge, conning tower, and foretop, a mass of heavy water falling on board.

52. From a fragment of shell picked up on the forecastle the projectile would appear to be an A. P., nearly 15 inches.

53. 7.12 p. m.—Turned together to south and opened fire at second battle cruiser from the left; hits were made with lyddite common at the fifth and sixth salvos. Range about 9,000 yards. First hit, abaft the foremost funnel; second hit, abreast mainmast. The enemy did not reply to our fire until after the third salvo, and then appeared to to be firing "individual." They usually fired about five seconds after *Hercules*.

54. Lieutenant commander (T.) observed the leading ship also hit during this time and that two or three of the enemy's shots fell 100 yards short between *Hercules* and *Agincourt* and one near *Revenge's* starboard quarter. This one burst.

55. 7.31 p. m.—Observed much smoke made by enemy. Received signal, "Enemy torpedo craft are approaching." A few salvos with 12-inch guns were fired at attacking destroyers, which fell among them; range, 6,000 yards. They then withdrew. *Agincourt* certainly made one direct hit.

56. 3.50 a. m.—Zeppelin on starboard bow. Fired 4-inch and 3-pounder without effect. Course, 345°. Zeppelin disappeared two points abaft starboard beam.

57. Ammunition expended: Twelve common filled powder, 4 A. P. filled lyddite, 82 common filled lyddite.

First battle squadron—Rear Admiral E. F. A. Gaunt.

58. The division's firing was well carried out. There was probably wastage of ammunition owing to many ships firing at the one nearest object, but there was no time to correct this by a signal, and if ships commenced leaving her to other ones she might have been left unfired at by any.

"Colossus"—Capt. A. D. Pound.

59. 7.05 p. m.—Opened fire 12-inch and 4-inch on enemy destroyer coming down on starboard bow, 4,000 yards. Hit destroyer, which disappeared, apparently sunk. "A" turret also fired on several destroyers farther off.

60. 7.12 p. m.—Immediately shifted to leading battle cruiser and opened fire at 9,000 yards range, closing at 7.16 p. m. to 8,400.

61. 7.16 p. m.—*Colossus* hit in superstructure just abaft funnel (foremost) by 12-inch shell, which exploded and caused fire in port gun decks and signal deck. Cordite chief cause of fire; extinguished in a few minutes. Another 12-inch shell hit sounding platform on port signal deck, but apparently passed overboard without bursting.

62. 7.17 p. m.—Heavy shell burst 30 yards short abreast "A" turret. Splinters penetrated foremost funnel and unarmored parts of ship in about 20 places and wrecked S. 1 searchlight; burst fire main in captain's cabin flat and caused unimportant damage. Range taker fore upper bridge severely wounded; one marine lookout same position slightly wounded. Leading signalman in foretop severely wounded.

63. 7.18 p. m.—Hit in forepart of ship by splinters from heavy shell, which burst short.

64. 7.15 p. m. to 7.20 p. m.—Fired five salvos at *Derfflinger* (or *Lutzow*) on beam, steering same course, 8,000–9,000 yards range. Observed at least four direct hits (fourth and fifth salvos) (two hits on water line). Enemy vessel obscured by heavy smoke and mist, but just previously observed to have listed.

65. Of the direct hits one entered the foremost superstructure on the starboard side and burst on the port side of the lower gun deck at a distance of about 24 feet from the point at which it entered. Two starboard 4-inch guns were manned at the time. This shell was a 12-inch H. E. shell. Detonation appears to have been complete, but its action was very local. The whole of No. 5 gun's crew were knocked down by the blast, and two men were wounded by splinters from the superstructure.

66. No. 5 4-inch port gun was temporarily put out of action, two pieces of the driving band of the 12-inch shell having caused the sight to jamb. The cam of the sight was untouched. A hole was made in the oil bath casing covering the training rack, and small pieces of metal falling in rendered the training stiff.

67. A splinter entered the left slit in the O. L. O. hood of "P" turret, and fractured the left front window of the range finder. Apparently the prisms are uninjured, and a test, using the "internal adjustment," showed the range finder to be in good adjustment. Damp, however, entered from the broken window.

68. As a rule, the flying splinters could be seen and avoided in the foretop, but, as a rule, the personnel will be too occupied to notice them.

69. A shell, bursting short, wounded two men in the top, and a further splinter made a hole about 3 inches in diameter in the support for the roof. The 1-inch side plates were hardly dented when struck by splinters.

"Revenge"—Capt. E. B. Kiddle.

70. 6.09 p. m.—Observed *Lion* hit on forecastle and on fire; soon extinguished.

71. About 6.55 p. m.—A light cruiser passed down between the lines, apparently making a torpedo attack. She was not fired at for some time, being possibly mistaken for British. Eventually *Marlborough*, with 13.5-inch and *Revenge* and ships astern with 6-inch opened fire on her, and she was soon apparently a wreck, stopped, with two funnels gone and on fire. She was not observed to sink.

72. On the fleet first deploying, fire was opened on the leading ship of the Second Squadron. Some salvos were fired, unspotted. Fire was then checked as the enemy was too indistinct. Subsequently, as our line turned to the southward, converging on the enemy, the leading division, consisting of five battle cruisers, came clearly into sight. Fire was opened on the leading ship. Hits were obtained with the second salvo, and bursts of flame were observed on the quarter deck. Hitting was continued for two salvos. As it was evident that several ships ahead were firing at this target, and that this enemy's ship was seriously damaged, fire was shifted to the fourth ship in the line, apparently the *Von der Tann*, and hits were obtained and bursts of flame noticed aft.

73. Two turret officers are of the opinion that she was sunk by the second of two salvos, of which three shots are believed to have struck and caused the ship to blow up. Fire was continued until a flotilla of destroyers, passing through the battle cruiser line, made a most efficient smoke screen, entirely obscuring the target. At this period the enemy fleet turned eight points to starboard and rapidly drew out of sight.

74. 3.55 a. m.—A Zeppelin was observed about 4,000 to 5,000 yards off, and two rounds of 15-inch were fired, besides fire from 3-inch H. A. gun. The tail was observed to dip, as if the 15-inch shell had passed fairly close, and it had the effect of driving the Zeppelin off at once.

"Bellona"—Capt. Arthur B. S. Dutton.

(Repeating ship for battleships.)

75. H. M. S. *Bellona* lay from three-fourths of a mile to a mile on the off side of the fifth division. In this position I had expected to get a fair share of "overs" round about me, but, as a matter of fact, only one large shell fell close (about 50 yards over), and it seemed to me that the enemy was firing mostly short. There was, of course, never any great volume of fire.

76. His salvos seemed to cover an extraordinarily small area, a thing which has struck me before.

77. I was not able to get much idea of what our own shooting was like. During the whole action I only saw two of the enemy's big

ships. I did see our shots hit the enemy twice, but beyond that it seemed to me that we also were shooting short.

"Neptune"—Capt. V. H. Bernard.

78. 6.40 p. m.—*St. Vincent* having dropped astern, *Neptune* opened fire on one of enemy's battleships which appeared to be unfired on. Owing to the mist, enemy could only be indistinctly seen. Fire was opened at 11,000 yards, but after two salvos, both of which appeared to be short, owing to the impossibility of spotting and gradual disappearance of the target, firing was discontinued. Enemy appeared to fire one or two salvos in our direction and then to discontinue.

79. 6.55 p. m.—About this time a three-funnel cruiser (*Moraves* class), apparently disabled, was observed to come out of the mist on starboard beam. She possibly fired the torpedo which hit *Marlborough.*

80. First Battle Squadron opened fire on her. *Neptune* fired one salvo at her, but as so many other ships were firing at this cruiser, I ceased fire. She was observed to be hit several times, and was lost sight of astern. She did not return the fire.

81. An enemy light cruiser was now seen steering to northward. She was soon hit, while turning to port, by a salvo from one of our ships. She appeared to stop and to settle down in the water. Believed to have sunk.

82. 7.10 p. m.—About six or eight German destroyers commenced an attack on our line from a position about two points before the starboard beam. A salvo from 12-inch was fired at them while 4-inch guns were being manned. *Neptune* opened fire with 4-inch guns on one destroyer, which was not being fire at, and hit her three times; then opened fire on another (the second in the line), and she was hit, too, believed by *Neptune,* but might have been by another ship. Both are believed to have sunk. The remaining destroyers were driven off, but not without torpedoes being fired at our line. The tracks of three torpedoes were clearly seen from the foretop, one of which passed very close to *Neptune,* and was avoided by use of helm.

83. About 3.45 a. m. on 1st instant a Zeppelin was observed on port quarter. She passed over to starboard beam. A round was fired at her from "X" turret, after which she turned away and made off.

"Agincourt"—Capt. H. M. Doughty.

84. 6.24.—Opened fire on enemy battle cruiser; range 10,000 yards. Target could just be made out, but her number in their line could not be stated with accuracy. Hits had been obtained on this ship when the smoke from our own armored cruisers blotted out the enemy vessels, one of which was very heavily hit.

85. 6.32.—Opened fire again on same ship. Another hit was observed, but mist made it impossible to be certain of fall of shot.

86. Our own line of fire was now blocked by our own destroyers. Fore control observed a battle cruiser, apparently crippled, heading in the opposite direction and flashing FU by searchlight. Fire was then opened on enemy four-funnelled cruiser, thought to be the *Roon*.

87. 7.06.—Four enemy battleships, apparently their fifth division, appeared out of the mist, two of which showed clearly against the mist. Opened fire on one of these; range, 11,000 yards. At least four straddles were obtained and effective hits seen.

88. 7.18.—6-inch guns opened on them. When five hits had been observed on the first, one fire was shifted to another; two hits were observed on her before she was lost in the mist. Enemy destroyers made a smoke screen which hampered the turrets firing during the time enemy ships turned away.

89. 3.52.—Zeppelin in sight. Opened with 6-inch guns and 3-inch antiaircraft. Apparently no hits were obtained on Zeppelin; she went away toward the east.

90. T. N. T. common were used throughout the action. Rounds fired: 12-inch guns, 144 rounds; 6-inch guns, 111 rounds; antiaircraft guns, 7 rounds.

"St. Vincent"—Capt. W. W. Fisher.

91. Range finders on *St. Vincent's* target agreed closely, gun range varying from 10,000 yards at start to 9,500 yards at the end. Rate very small, about 50 closing. Only small spotting corrections of up or down 50 occasionally necessary to change from 1 short to 2 short. German fire, which was brisk and regular at the start, very soon declined in rate and accuracy.

92. *St. Vincent's* fire was by director, and the target was held closely till 7.26 p. m. (32 minutes in all), when the enemy had turned 8 or 10 points away, disappearing into the mist and with a smoke screen made by destroyers to cover them as well.

93. Total rounds fired, 96 (88 A. P. lyddite and 8 common lyddite).

"Collingwood"—Capt. James Ley.

94. From time to time after this the flashes of the guns of the enemy's ships beyond the cruiser were observed, but insufficiently clearly to lay the director or guns on, and at no time could the enemy's hulls be seen from the fore conning tower or director tower.

95. About 7.20 p. m. (?), an enemy's battle cruiser, taken by me to be *Seydlitz* appeared on starboard beam (turned to same direction as our fleet), shortly followed by another. Other officers considered she was a *Derfflinger*, and the question remains in doubt, though my impression of the central funnel is a fairly clear one. She presented a clear target, range about 8,000 yards, and fire was shifted to her. Unfortunately the guns were loaded with lyddite common shell.

She was struck at once by two salvos, which started fires and silenced all but her fore turret guns. She very shortly (and before A. P. shell could arrive at the guns) disappeared in dense smoke, which was being made by a number of destroyers (not more than six) which were attacking from about two points before our beam. The general impression is that these destroyers turned round to starboard (i. e., toward course of our fleet) to fire their torpedoes at a range of about 9,000 yards.

96. While approaching, and after turning, they made dense clouds of smoke, into which the battle cruisers disappeared. It occurs to me that the latter were accompanying the flotilla, probably fired torpedoes themselves, and then took cover in the smoke of the destroyers.

"*Royal Oak*"—*Capt. C. Maclachlan.*

97. 7.15.—Observed three enemy battle cruisers to westward on starboard beam. Opened fire with 15-inch guns on leading enemy's battle cruiser *Derfflinger* class. Atmosphere much clearer for a few moments.

98. 7.16.—Enemy ship fired at was observed to be hit several times aft. Opening range, 14,000 yards. Speed of own ship, 15 knots. Enemy turned away into mist. Fire was shifted to the next ship; a few rounds only could be fired as she was soon lost in the mist. All 6-inch guns were meanwhile firing on the enemy destroyers on starboard beam, who were zigzagging frequently.

99. The total expenditure of ammunition being 15-inch, 39; 6-inch, 84.

100. 7.44.—Heavy firing heard from rear of British line; enemy ships very faintly visible on starboard quarter. Shots seen falling fairly close to *Benbow.*

101. 8.20.—Three light cruisers of *Calliope* class under heavy fire; observed a hit on starboard quarter of rear cruiser abreast second gun from aft. Apparently did not affect the ship.

102. At 10.12 p. m. and 10.45 firing again broke out in this direction. In the latter of these a battleship division was apparently engaged, ships being occasionally silhouetted against searchlights.

103. There were no mishaps with the exception of one missfire with a 15-inch gun, and this was immediately rectified.

"*Marlborough*"—*Capt. George P. Ross.*

104. The torpedo-boat destroyer *Agasta,* lying disabled, was then passed one cable on the port beam. At 7 p. m. fire was reopened on a disabled enemy ship; range 9,800 yards. Four salvos were fired, and the third and fourth were observed to hit. Ceased fire at 7.07 p. m.

105. At 7.12 p. m. opened fire on battleship of *Markgraf* class, one point before the starboard beam, distant 10,200 yards, steering south.

Fourteen salvos in 6 minutes were fired at this ship, and the sixth, twelfth, thirteenth, and fourteenth were observed to hit.

106. Two common and two A. P. shells from 13.5-inch guns and 12 H. E. shell from H. A. gun were fired, and the Zeppelin was observed to dip suddenly, but proceeded on its course.

Second battle squadron—Vice Admiral T. H. M. Jerram.

107. *Orion*—6.15 p. m.—Trained on an enemy cruiser, apparently of *Kolberg* class already on fire aft and stopped, steam escaping from funnels, foremast shot away. Range 12,400 yards. Did not open fire, as blanked by a ship of First Cruiser Squadron.

108. *Orion*—6.32 p. m.—Sighted ship of *Kaiser* class, 105° Greenwich, range 11,100 yards. Fired four salvos by director, first two short, third over, fourth hit with 13,300 on sights. Large flames observed near enemy's after turret when fourth salvo fell. Enemy then obscured.

109. *Monarch*—6.33 p. m.—Sighted five battleships, 95° Greenwich, three *Konigs* and two *Kaisers;* range, 12,000 yards. Opened fire on leading *Konig;* two salvos, first right and over, second appeared to straddle quarter deck. These ships disappeared from view, but we fired one salvo at one of *Kaisers*, the result not being seen.

110. *Thunderer*—About 6.33 p. m.—Two *Kaiser* class (apparently) were now overlapping each other, showing between *Iron Duke* and *Royal Oak* and fire was opened through the interval. First salvo was over, second salvo straddled in line with foremast, and two or three large bursts with black smoke were observed. (*Thunderer* was using powder filled common.) A third salvo was fired with no correction, and a similar result obtained. The enemy was blazing for the whole length of her quarter deck. A. P. shell was then ordered, but *Iron Duke* masked the fire. Enemy was firing rapidly by salvos at first, but shortly came down to slowish fire from one turret.

111. *Ajax*—7.10 p. m. (approximate).—Fired one salvo, which fell short, at an enemy battle cruiser; range, 19,000 yards. Fourth Light Cruiser Squadron then crossed line of fire and obscured the view.

112. *Monarch*—7.14 p. m.—Opened fire at *Konig* class escorted by destroyers, 76° Greenwich. Fired five salvos, the last two appearing to straddle. Range, 17,350–18,450 yards. Enemy commenced zigzagging after third salvo.

113. *Orion*—7.15 p. m.—Opened fire on battle cruiser, of *Derfflinger* class. Fired six salvos, the last two straddling. Enemy turned away about the fourth salvo. Range, 19,000 yards.

114. *Monarch*—7.19 p. m.—Sighted battle cruiser *Derfflinger* class. One hundred and ten degrees Greenwich. Range, 16,000 yards.

Also battle cruiser (*Seydlitz* or *Moltke*) behind and beyond her. Trained on enemy, but director missfired, and then ships disappeared in haze.

115. *Thunderer.*—Powder filled common excellent to commence with; i. e., till straddling is well established, the bursts being easy to distinguish.

116. *King George V*—7.17.—Opened fire on leading enemy ship; range on sights, 12,800 yards; salvo fell short. Remainder of Second Battle Squadron had opened fire shortly before. Target ship was either leading German battleship or *Lutzow* class battle cruiser with three destroyers on engaged side making a heavy smoke screen.

117. 7.20.—Altered course four points to port together by signal.

118. 7.22.—Target obscured by smoke screen and haze; ceased fire.

Fourth Battle Squadron—Vice Admiral F. C. D. Sturdee.

119. *Bellerophon*—6.15 p. m.—Sighted some gray misty objects. 6.25—Opened fire. Control officer given free hand. Impossible to count enemy.

120. *Benbow*—6.28 p. m.—Director on German ship *Lutzow* class, 16,000 yards.

121. *Benbow*—6.30 p. m.—Opened fire. Shots lost in haze.

122. *Vanguard*—6.32 p. m.—Opened fire at 3-funneled cruiser (?) *Freya,* 11,000. Hit fourth salvo.

123. *Temeraire*—6.34 p. m.—Opened fire on cruiser. Hit third salvo.

124. *Benbow*—6.35 p. m.—Fired again with A and B turrets.

125. *Benbow*—6.38 p. m.—Fired again with A and B. Target then obscured by ship on fire drifting between ship and enemy.

126. *Benbow*—6.40 p. m.—Fire again opened; 12,500 target crossed after second salvo. Mist then obscured.

127. *Bellerophon*—6.40 p. m.—Checked fire. No enemy in sight.

128. *Benbow*—6.48 p. m.—Observed enemy turn away.

129. *Benbow*—7.09 p. m.—Fired at torpedo-boat destroyers (6-inch).

130. *Bellerophon*—7.09 p. m.—A turret and 4-inch at destroyers; hit.

131. *Canada*—7.15 p. m.—Engaged torpedo-boat destroyers before beam.

132. *Benbow*—7.17 p. m.—Opened fire A and B (?) *Lutzow.*

133. *Bellerophon*—7.17 p. m.—Opened fire at battle cruiser; 11,000; straddled.

134. *Temeraire*—7.17 p. m.—Opened fire at enemy battle cruiser; 12,000; 7 salvos.

135. *Benbow*—7.19 p. m.—Opened with all turrets.

136. *Canada*—7.20 p. m.—Four salvos at battleship or battle cruiser.

137. *Vanguard*—7.20 p. m.—Fired a few 12-inch at torpedo craft.

138. *Benbow*—7.20 p. m.—Hit seen on German battle cruiser. Mean R. F. range same as on sights at this salvo.

139. *Canada*—7.25 p. m.—Engaged destroyers with 6-inch.

140. *Vanguard*—7.25 p. m.—Few salvos at torpedo-boat destroyers.

141. *Benbow*—7.28 p. m.—Ceased fire. Smoke screen.

142. *Canada*—7.30 p. m.—Three salvos of 14-inch on torpedo-boat destroyer; hit.

143. *Vanguard*—7.30 p. m.—Fired at enemy light cruiser; disabled.

144. *Temeraire* (? p. m.).—Four-inch on torpedo-boat destroyers; also two 12-inch salvos.

145. *Benbow*—7.32 p. m.—German torpedo-boat destroyer sunk.

146. *Benbow*—7.34 p. m.—German torpedo-boat destroyer sunk. German torpedo-boat destroyer observed to capsize.

147. *Benbow*—7.35 p. m.—Six-inch on torpedo-boat destroyers; enemy's battle cruiser reported still afloat. Two funnels and two masts showing above water.

148. *Benbow*—8.57 p. m.—One salvo, 6-inch, at torpedo-boat destroyer.

149. *Temeraire*—10.35 p. m.—Destroyer leader glow from shell bursts.

150. *Vanguard*—10.35 p. m.—Destroyer leader disappeared or sunk.

151. The general gunnery efficiency seemed to be good and no breakdowns were reported. The conditions of light and haze did not give the ships much opportunity for using their guns, and the restraint from firing when the enemy was hidden by haze reflects credit on the control. The rapid manner in which the destroyers were made to turn away promptly showed good control and effective fire.

152. None of the ships were struck nor were there any casualties.

153. The visibility was low and variable, the maximum range obtained being 13,500 yards, which was recorded in *Benbow* at 6.14 p. m., as the range of an enemy capital ship. The average range obtainable was about 11,000 yards.

154. Owing to the haze and low visibility the targets were few and consisted of a light cruiser at moderate range, a battle cruiser at longer range, and destroyers approaching to attack.

155. Firing commenced on an enemy's battle cruiser at 6.30 p. m., and, due to the varying visibility, was intermittent up to 7.28 p. m., when the enemy retired behind a smoke screen.

156. The following ammunition was expended from the main armament: *Benbow,* 40 rounds; *Bellerophon,* 62 rounds; *Temeraire,* 72 rounds; *Vanguard,* 80 rounds.

Fourth battle squadron—Rear Admiral A. L. Duff.

157. During the engagement the third subdivision was never under fire of the enemy and the few shots that fell in our vicinity were either ricochets or "overs." Only two ships of the enemy were seen with sufficient distinctness to enable fire to be opened on them. These ships I believe to have been the *Derfflinger* and a cruiser of the *Prinz Heinrich* type. Identification was an extraordinarily difficult matter, but I am fairly sure that neither were battleships and that the only indication I saw of the enemy line of battle was from smoke and the flash of guns.

158. The ship believed to be a cruiser of the *Prinz Heinrich* type came under a very heavy fire and was apparently disabled and her guns silenced. The *Derfflinger* at first was firing from four turrets, but latterly it seemed from only one. A fire was seen to break out aft. I thought it was followed by an explosion.

159. *Visibility.*—At the time the signal for deployment was made (6.14 p. m.—G. M. T.) I estimated the visibility at about 5 to 6 miles. By 6.45 p. m. it had somewhat decreased and the light was becoming bad. From then on the visibility varied, but was not, I think, ever more than 12,000 yards. The direction of the wind was SW. by S.—Light.

"Benbow"—Capt. H. W. Parker.

160. Very great difficulty was experienced in getting the director on to the target and fire could not be opened as soon as it ought to have been. The enemy could be seen from the gun-control tower and conning tower when using Zeiss glasses, but not from the gun telescope on the bearing plate.

"Benbow"—Spotting officer.

161. The difficulties of spotting on this occasion were very great.

162. With the mist varying in intensity, enemy ships coming into sight for a few seconds and then disappearing, I found it extremely hard to be certain that I was spotting on to the same ship as that indicated (through the voice pipe) by the control officer.

163. The difficulty of being certain that one was spotting on to the ship fired at was even more marked.

164. For some seconds after each slavo my vision was blanked by smoke, my glasses shaken off the object, and owing to the short range and consequent short time of flight in which to recover (to say nothing of the fact that between the moment of firing and the fall of shot there was often a small change of helm) it was practically impossible to be certain that one was spotting on the ship fired at.

165. The position was galling and trying to the last degree; but I had no alternative on more than one occasion but to inform the control officer that I could not observe the fall of shot (this being probably due to my spotting on the wrong ship).

"Benbow"—Director layer.

166. Little difficulty was experienced, due to smoke from our own guns, but great difficulty, due to the short range of visibility.

167. Great difficulty was experienced in getting on to the object at which the control officer wished to fire, due to the distance of the control officer from director tower.

168. When aloft the control officer has the same condition of light as director layer when below. Either may see the object, whereas the other may not be able to do so.

169. It was particularly noticed with regard to the enemy's salvos that in all cases one projectile fell well to the left (our left) of the remainder, and that whereas the single shell invariably exploded on striking the water, the remainder did not.

"Benbow"—Gunnery Report.

170. 6.14 p. m.—Obtained ranges of an enemy ship with three funnels (13,000–14,000 yards) bearing Greenwich 60°, apparently in a damaged condition. Probably *Helgoland* class. Trained guns on, but did not fire.

171. 6.26 p. m.—*Iron Duke* opened fire.

172. 6.29 p. m.—After great difficulty, owing to the haze and smoke, succeeded in getting director on to a German ship, apparently of the *Kaiser* class, obtaining two ranges from "X" turret, mean of 16,000 yards.

173. 6.30 p. m.—Opened fire with "A" and "B" turrets, Greenwich 73°. Shots lost in haze.

174. 6.35 p. m.—Fired again with "A" and "B" turrets. Object obscured by haze.

175. 6.36 p. m.—"A" and "B" turrets fired.

176. 6.38 p. m.—"A" and "B" turrets fired. Object was then obscured by smoke from an enemy ship on fire drifting down between *Benbow* and the enemy. This ship was apparently an enemy cruiser with three or four funnels. Several of *Benbow's* range finders were apparently taking ranges of this ship instead of the ship actually fired at.

177. 6.40 p. m.—Fire was again opened with "A" and "B" turrets, at a range of 12,500 yards. The target was crossed after the second salvo, and the order "Control" was given by the control officer. The cease-fire gong was then rung, mist and smoke obscuring the target.

178. 6.48 p. m.—The enemy were observed turning away to starboard.

179. 7.2 p. m.—Passed wreck of *Invincible.*

180. 7.9 p. m.—6-inch opened fire on destroyers bearing Greenwich 56°, at 8,000 yards.

181. 7.11 p. m.—One destroyer observed to be on fire.

182. 7.17 p. m.—Opened fire with "A" and "B" turrets on enemy ship, *Lutzow* class, Greenwich 132° (about).

183. 7.19 p. m.—Spotted down and opened fire with all turrets.

184. 7.20 p. m.—Hit observed near after turret by several observers.

185. 7.28 p. m.—Ceased fire. Enemy destroyers making smoke screen. 6-inch ceased fire about this time.

186. 7.32 p. m.—German destroyer observed to sink.

187. 734 p. m.—German destroyer making smoke observed to sink.

188. 7.34 p. m.—German destroyer observed to capsize.

189. 7.35 p. m.—6-inch opened fire on two lots of destroyers. Enemy battle cruiser reported to be still afloat, two masts and two funnels showing above water.

190. 7.49 p. m.—Collected reports of rounds fired: "A" turret, 12; "B" turret, 12; "Q" turret, 4; "X" turret, 5; "Y" turret, 5; total rounds fired, 38.

191. 8.57 p. m.—6-inch firing on destroyers, one salvo (short).

192. 9.02 p. m.—Altered course four points to port.

193. 9.14 p. m.—Observed star shell on starboard bow.

GERMAN MERCHANT MARINE. **28 January, 1921.**

Before the war the German Admiralty maintained a special division under its jurisdiction entitled the "See Transportabteilung" (Ocean Transportation Division), which was headed by a ear admiral under the direction of the chief of the naval staff. This office had under its direction in Berlin a number of naval constructors, naval engineers, and a few line officers. There was also attached to the office one liaison officer from the general staff, who was charged with the duty of keeping the navy informed of the requirements of the army for transportation. Under the control of this office were a number of "ships inspection offices," located at Hamburg, Bremerhaven, and Danzig. The "ships inspection offices" were charged with the duty of keeping the main office informed of all the details of new ships placed in commission in the German merchant marine. These ships were inspected to determine the best use which could be made of them as auxiliaries to the German navy in the event of war. The ship owners were not consulted nor informed of the reports of this board of inspection, nor was the building influenced in any way by the board. In other words, the board took the ships as they found them, and reported upon the best use to which they could be put as auxiliaries in the navy.

Owing to the fact that ships equipped with special apparatus or munitions which would be of assistance in time of war would in itself deprive these ships of their character as merchantmen, and would permit a neutral Government to classify them as auxiliary cruisers. They were not changed in any respect before the outbreak of war. The "See Transportabteilung" was charged with the duty of determining exactly what changes should be made in the vessel to equip her for the duties assigned. Of this the owners were kept in ignorance. This division was also charged with the duty of providing for taking over the vessels, personnel in the shipyard for making the necessary alterations, and for the assembly of the material at the dockyards for such conversion.

Since it was necessary to carry out these conversions immediately upon the outbreak of war, and also since the ships could not be converted unless they happened to be in German ports at the time, it was necessary for the S. I. B. (ships' inspection board) in the various harbors to keep the S. T. A. (See Transportabteilung) informed at all times as to the ships available and the names of the vessels in port.

The method of procedure in general was as follows:

A certain number of vessels, having been reported on by the board as suitable for conversion into mine layers, were listed as navy auxiliary mine layers "A," "B," "C," etc. The alterations necessary for such conversion and the disposition of the mines, together with the necessary personnel for making the changes in the new vessel, were arranged in detail by the main office in Berlin. On the outbreak of war the vessels available in German ports for such conversions were listed in Berlin, the material necessary was assembled at the dockyards, and a special force of workmen detailed for this work only were available. In this manner, for example, the *Konigen Louise* was ready 36 hours after the outbreak of war to proceed to the mouth of the Thames for mine-laying operations.

The liaison officer from the general staff, kept the S. T. A. informed at all times as to the number of troops to be transported, the destination, and the probable dates of such overseas operations. Owing to this liaison, the German Admiralty was able to cooperate in the most remarkable manner in the operations in the Baltic against the islands of Moon, Osel, and Dago. This joint army and navy offensive was carried out without loss of time, confusion, or mishap, owing to the perfect cooperation and the authority granted to the S. T. A. The operations after embarkation were entirely under the control of the navy.

The number and character of vessels required for transports at the port of Danzig were controlled entirely by the S. T. A. after the general staff had determined on the time of embarkation and the number of troops required in the operation.

In order to carry out this comprehensive program, the following laws were necessary:

The Reichstag had previously passed a Kriegsleistungsgesetz, requiring, in time of war, the owners of all property which would be useful to the Government to place same at their disposal on the outbreak of war. This law permitted the S. T. A. to select from some 2,000 ships those necessary for cooperation with the navy. As this large number of ships was not required, the S. T. A. could select from the list those which were most suitable for the Government purposes intended. The owners were therefore given the following information, viz: "In the event of war with France, the following vessels will be required by the Government, if they are in German ports at the outbreak of war, or if they can be called back to German ports after having sailed. In the event of war with England, certain other ships will be required, etc."

Unknown to the owners, these vessels were then labeled as auxiliary cruiser "A," "B," "C," etc.; mine layers "A," "B," "C," etc.; troop transports "A," "B," "C," etc.; and scout cruisers "A," "B," "C," etc. Nothing was done in the time of peace to indicate in any way the manner in which these vessels were to be converted in time of war, nor were gun supports for the decks, rails for the mines, or any other military devices installed. This latter was all provided for in the dockyards to which these vessels were assigned should they be in German ports or available at the outbreak of war. This involved considerable work for the S. T. A., but had the advantage of allowing all these vessels to retain their character as merchantmen and permitting them to depart from enemy and neutral ports on the outbreak of war *under the provisions of international law.*

The German Admiralty claimed that the conversion of large passenger vessels into mine layers and auxiliary cruisers was a mistake, as these vessels can be easily recognized, have no offensive power against even destroyers or light cruisers, and therefore must be either well protected by screens of destroyers or sacrificed. Greater value for such operations is attached to the mine-laying submarine and submarine and submarine cruiser. The *Konigen Louise*, for example, succeeded in her mission of laying mines off the mouth of the Thames, but was lost in the engagement which followed. Although it is claimed one English vessel was blown up as a result of this mine field, the loss of the ship prevented the operation from being entirely successful. Although the auxiliary cruisers *Moewe* and the *Grief* were thoroughly successful in their war on English commerce, the Germans do not believe that such operations are to be recommended, especially as the submarine has been developed

to such an extent that these operations may be carried out with equal results and a greater probability of success than with converted merchantmen. In the case of the German operations in the early part of the war, this method of using merchantmen was resorted to as a measure forced on them by their lack of submarines. (At the outbreak of war Germany had all told *28 submarines built*, of which about *18 were ready for sea* and which as a weapon for offensive warfare had not been tried out.)

One of the faults of the organizations of the S. T. A. was the absence of young and energetic officers in this division. Admiral von Tirpitz had insisted upon the assignment of practically all the active personnel to the High Seas Fleet with the result that there were available for the S. T. A. only retired officers and reserves. In spite of this handicap, the S. T. A. appears to have functioned perfectly. This was due to the painstaking arrangement, the extraordinary detail in which all plans were worked out, and kept up to date.

Since the war the S. T. A. has been carrying on along the lines indicated above. The division in the Admiralty is now directed by Capt. Lohman, who is responsible to the chief of the Admiralty alone. He receives his general instructions from this officer, but the details of all operations, together with the liaison maintained with the general staff, is entirely under the control of Capt. Lohman. At the present time this division is perfecting plans for operations defending German harbors from attack by the Russians. This involves the preparation of an auxiliary fleet of ex-merchantmen to act as mine layers, anti-submarine defense vessels, and for the laying out of nets in German harbors. For this purpose the ships inspection board are still kept up with whatever forces are available. The number of officers is very much reduced, and the work devolving on the individual officer is therefore extremely arduous. At the present time these boards of inspection are still being maintained in the ports of Hamburg and Bremen. The S. T. A. has also the duty of converting previous German warships into merchant ships. Most of the vessels affected are the older German destroyers, which were not required to be surrendered under the terms of the treaty. Some of these destroyers have been converted into four-masted sailing vessels, with practically no change in the hull, except that the double bottoms are filled with water for ballast. The cost of such conversion for destroyers is very close to 1,000,000 marks (paper). Two such vessels have been completed, but to date no report has been made on their seaworthiness or operations. The Admiralty finds it more economical to convert those vessels which at the time of the armistice were still on the building ways in an incompleted state. One of the older cruisers was to have been converted into a tank steamer. The plans for this conversion were complete and the cost estimated at 10,000,000 marks. This

plan was not carried through on account of objections raised by the "reparations commission." Plans were also complete for the conversion of one old cruiser to a freight and passenger vessel. These plans involved the lengthening of the bow and the removal of all armor from the ship. The vessel was then to be equipped with new oil-burning boilers and turbines. It is reported on reliable authority that this experiment has not been entirely successful, as trouble develops with the oil-burning boilers. Two of the ex-destroyers were converted into cargo vessels and Diesel motors installed in the after end of the vessel. The bow was cut off and made into a more or less rounded shape to yield additional cargo space. The speed of such vessels was to be approximately 12 knots.

Although plans had been made for the conversion of a large number of the remaining 40 destroyers and older cruisers, it is doubted whether or not this program will be carried through. The reasons for this are that the requirements of the reparations commission are not known in advance. The result is that from time to time the Germans, after completing a vessel, are required to turn same over to the Allies, without a previous notification. For the same reason the dockyards, which are capable of building ships at a rate of 600,000 tons per year, are doing practically no work at the present time. The reparations commission may demand the delivery of up to 200,000 tons, but may also specify that only small vessels of approximately 2,000 tons be built. These conditions have resulted in holding back the German shipbuilding industry up to the present time. It is learned on reliable authority that the British shipping interests are attempting to negotiate for the sale of former German vessels surrendered under the terms of the treaty to the Hamburg-American Line and to the North German Lloyd. As the sale can be made at the present time for about £10 per ton, it is believed the Germans are seriously considering the offer. As public opinion in England will not permit a direct transfer of these vessels to the German flag, the negotiations will probably take the *form of a sale to the Scandinavian nations, with the understanding that in the course of a year or more these vessels are to be transferred to the German agents involved in the transaction. As such transactions will have a direct effect on the American shipping industry it is believed that this report should be investigated by the United States Government.* The Harriman interests are in a position to give some details on this proposed scheme.

At the present time the situation in regards to deliveries of ship tonnage to the Entente is as follows:

"Up to 31 December, 1920, Germany had delivered to the reparations commission the following amounts of ship tonnage:

	Tons.
Steamers	2,019,655
Tugs	9,750
Sailers	25,329
Total	2,054,734

Five hundred thousand tons of shipping are still to be delivered.

Of the delivered ship tonnage, 1,814,273 tons have been distributed, as follows:

	Tons.
To England	1,477,939
To France	166,924
To Italy	124,901
To Japan	28,678
To Belgium	15,831
Total	1,814,273

The activities of the North German Lloyd at the present time are very limited. In conjunction with the United States firms, they have arranged for only three trade routes. The amount of vessels is small at the present time, but can be rapidly expanded in case the reparations commission sets a definite limit on the tonnage to be delivered annually.

Shipping at Bremen in the last months of 1920 assumed half the proportions of 1913. The North German Lloyd expects by 1926 to have a third of its 1913 tonnage again in service.

DESTROYER ORGANIZATION, JAPANESE NAVY.

Source: Reliable.

(11585.)

8 January 1921.

The basic destroyer organization of the Japanese Navy is as follows:

Four destroyers comprise one flotilla. Three flotillas comprise one division.

Each flotilla is commanded by a full captain, who is also in command of one of the boats of the flotilla. He has on his flag boat, in addition to the regular assigned ship's officers, one doctor and one paymaster, both in the grade of sublieutenant first class (junior lieutenant), who are the flotilla medical and pay officers.

Each division is commanded by a rear admiral. His flagship is a light cruiser commanded by a captain, who is in all cases junior to the flotilla commanders.

A division commander has on his staff one doctor, one paymaster, one engineer officer, and one gunnery officer (torpedo expert). All of the above officers are senior to officers doing similar duty in the flotillas or individual boats.

Each division is assigned to a battleship division and has no repair or parent ship.

There is no organization embodying the entire destroyer force, and if occasion should arise for a unified operation of the combined destroyer divisions the command would devolve upon the senior division commander.

The Japanese are convinced that a flotilla should comprise an even number of boats to facilitate mine sweeping, etc. They are of the opinion that six boats can not be properly handled and maneuvered. Therefore they intend to limit a flotilla to four boats. But, as their number of boats increases, it is not yet decided whether to expand by increasing the number of flotillas in a division, or by the number of divisions assigned to a battleship division, or to retain the present organization and create in addition a separate destroyer force.

AVIATION.

RIGID AIRSHIP R–36, CONSTRUCTED BY WM. BEARDMORE & CO. (LTD.).

Source: Reliable.

(6964.)

22 January, 1921.

The *R–36*, built by Wm. Beardmore & Co. (Ltd.), Dalmuir, Scotland, in accordance with design supplied by the Air Ministry, has an overall length of 675 feet and the midship cross-section diameter is 75 feet. Her cross section is represented by an inscribed polygon, one side forming the keel, the top of the ship being the apex formed by the junction of two sides. This ship was originally designed for war purposes, but last spring the design was altered slightly by the Air Ministry, so as to convert her into a passenger-carrying airship. The capacity of the ship is roughly 2,156,000 cubic feet. The form of the ship is very similar to the *R–34*, but, perhaps, slightly finer, and has slightly greater length and capacity, having one more gas bag of 10-meter section than the *R–34*. The disposable lift is estimated at 29 tons, the same as the *R–34;* the added section is supposed to offset the weight of the passenger car, but, of course, there are other refinements which asist to make this more possible.

Gas Bags.

There are 19 gas bags, all of 10-meter length. The usual method of construction has been employed in these bags, although some of the bags have been single-skinned only, while most of them have been double-skinned on the upper half. The bags appeared to be holding up fairly well, although one bag has been removed on account of high diffusion.

Outer Cover.

The British practice of securing the outer cover appears to have been abandoned in this ship and the German method of dividing the outer cover into longitudinal strips adopted. A very taut outer cover is the result. The linen material used is, in comparison with that formerly employed, much heavier and stronger.

Dope.

The dope for the outer cover is supplied by the Air Ministry and is applied by brushes as opposed to spraying, two coats being applied; the first, dark red in color, and the second aluminium. The formula for this dope is a secret and not known by Beardmore & Co. (Ltd.).

Miscellaneous Fittings.

Gas trunks, formed of circular wooden hoops and cotton cord mesh similar to those used in the *R–34*, are employed. The automatic valve cages are also of the *R–34* type.

A new departure with respect to obtaining gas purities has been instituted. In a previous design rubber tubing has been secured to the gas bag at the top and to obtain purities it was necessary to go on top of the ship along the walk way. On the *R–36* small aluminium tubing is secured to each bag near the axial cone. This tubing is brought down to the keel way through the gas trunk and the end closed by a screw cap. To take purities, it is only necessary to disconnect this cap (which can be done from the keel way), and connect the purity meter to the aluminium tube.

Thirteen maneuvering valves are installed and the controls of these valves inclosed in aluminum tubes, which are also carried inside the gas trunks. A top walk way with safety rope is incorporated in the top structure of the ship to permit examination of the maneuvering valves.

The keel or corridor is triangular in cross section, similar to *R–34*, running from No. 5 frame aft. Forward of this keel the walk way is continued to the extreme bow, the walking space formed by means of inverted U-shaped stanchions to support the gas bags.

These stanchions are covered with light fabric to form a passageway. A hinged trapdoor is provided in the bow to permit passengers embarking from the mooring tower. Standard bow mooring gear is also installed. Along this walk way from the extreme bow and along the apex of the keel are carried the gas line and water line, and along the bottom of the walk way the petrol line is also carried in order that the ship may be completely "gassed," "fueled," and water ballast bags filled from the mooring tower. Such an arrangement has often been suggested, but this is the first ship to have it incorporated in the design. Along this keel are distributed sixty 90-gallon petrol tanks, 36 of these being "slip" tanks, and the remainder "fixed" tanks. Both slip and fixed tanks are connected by permanent tubing to the main fuel line, the slip tanks having a knife incorporated in the suspension system so that in case the tank is slipped the petrol line will be severed. By thus doing away with the rubber hose connections the nuisance caused by petrol fumes is to a great extent obviated.

Four emergency water ballast bags of 500 pounds capacity are slung at No. 5 frame forward, two on each side of the walk way and the same number at 17 frame aft. Four ordinary water ballast bags of 1,500 pounds capacity are supported along the keel at intervals forward of the passenger car (the center of gravity of the passenger car being directly beneath the center of gravity of the ship) and four such bags aft of the passenger car.

Passenger Car.

The passenger car is designed to carry 52 passengers comfortably and is rigidly attached to the ship's structure, one of the criticisms being that in case the ship were needed for war use this car could not be easily removed. It has an overall length, including fairing, of approximately 165 feet. The interior arrangements are rather luxurious and compare favorably with those found on the Pullman trains.

A passageway formed by stanchions runs down the center of the car, and on each side of this passageway passenger accommodations are provided. A very neat folding bunk is fitted for each passenger and when not in use is folded up out of the way.

Amidships we find a galley, which is very similar to those usually encountered on Pullman dining cars. A small aisle runs along the starboard side of this galley, connecting the two passenger spaces.

Separate toilet facilities are provided, one in the forward part of the car and the other amidships.

Large triplex glass windows are installed along each side of the car and fitted on a slant so that the passengers have a view both outward and downward.

A companionway connects with the keel so that passengers embarking from the mooring tower may enter the car with comfort.

An entrance door is provided in the rear of the car for embarking passengers in case the ship is secured in a hangar.

The roof or ceiling is of duralumin, and when the airtight door to the companionway is closed the car is absolutely sealed from the remainder of the ship, and, consequently, smoking can be permitted in the former.

Above this car, along the keel, hammocks are slung, which provide sleeping accommodation for the crew.

There is no intention at present of installing any method of heating the passenger car. However, I was informed that plans have been drawn up for heating this compartment by means of the exhaust from the two after wing cars.

Control Car.

The control car is fitted directly forward of the passenger car. The original design called for this gondola to be slung forward, similar to the *R–34*, but it was finally decided to fit it directly forward of the passenger space. The installation of this car is not a very neat job, and it appears that a far more stream-line arrangement would have resulted had this been made a continuation of the passenger car. It is exactly similar to the forward part of the *R–34* control car, with the exception that the water-tight cabin takes up the whole of the afterpart. The instruments, controls, etc., are standard and similar to those supplied to all of His Majesty's airships.

Crew Facilities.

A crew space is provided in the keel forward of the control car, where arrangements are made for messing.

A cooker in each of the two wing cars is provided for the use of the crew.

Bunks, as previously stated, are slung along the keel above the passenger car. They will be supplied by the Air Ministry.

It is expected that the ship's officers will obtain accommodations in the passenger car.

Electric lights are fitted along the keel at intervals, so that when under way at night no difficulty will be experienced in walking along the corridor or in reading the manometers (fitted along the keel) or petrol gauges.

Speaking tubes are fitted from the control car to crew space, bow mooring position, and to top-gun platform. It is not known if telephones are also to be provided.

Toilet facilities for the crew are installed in the keel aft of the after power car, similar to *R–34*.

Engines and Engine Cars.

The forward wing cars have been taken from the former German ship *L–71*, which are fitted with the standard 260-horsepower *Maybach* airship engine. These cars are being fitted to the *R–36* in order to get the ship ready as soon as possible, but later, when the forward wing gondolas for the *R–36* are completed, they will be fitted in place of *L–71's* engine cars. These gondolas will be very small and somewhat similar to the *L–71's* and they will be fitted with Rolls Royce eagle engines of 360 horsepower.

The remaining power cars are large and roomy and are fitted with Sunbeam Cossack engines.

The radiators are quite large and of the housing type, very similar to *L–64* design, housing inside the power car, but their weight supported by the ship's structure.

It is stated that the propeller diameter is 16 feet 15 inches and the tip clearance not less than 2 feet.

The oil radiators are fitted on the side of the gondola and they also appeared very large; they are similar to *R–34* type.

The maximum full speed of the ship is expected to be about 60 miles per hour.

Conclusions.

Altogether the ship presented a very neat design, and passengers taking passage in her should be very comfortable.

It is understood that this ship will operate on the proposed commercial route between Pulham, England, and Cairo, Egypt.

This is the largest type ship the firm of Wm. Beardmore & Co. (Ltd.) can erect, due to limited hangar space, and since no further

contracts for airship construction seems to be forthcoming, it appears that this firm will have to close down this part of their establishment on the completion of the *R–36*.

"R–80" TRIAL FLIGHT.

(6964.)

Source: Reliable. **26 February, 1921.**

	Feet.
Length	535
Height	85
Diameter	75
Capacity	1,222,200

The hull contains no parallel section, being purely stream lined. The outer cover is similar to *R–33* and is very loosely put on. The horizontal fins are set at a slight dihedral angle. The hull framing is similar to *R–33* with the exception that king posts are as shown in sketch. They are very satisfactory and 1,500 pounds was eliminated from the hull weight by their use. A test was made with two gas bags 100 per cent full with the bag between the two completely deflated. There was no undue deflection in this condition and the endways deflection due to the bulging out of the ends of the bags did not affect the king posts, as would seem natural, to any marked extent.

The N. P. L. had predicted from model experiments that the ship was overstabilized and that the control of the ship in the air was very sensitive and was excellent. The drum transmitting pull to the rudders and elevators is fitted with a logarithmic spiral, so that the arm acting as the load increases becomes larger also. The horizontal and vertical controls were very satisfactory.

During the trial flights the outer cover flapped very violently in the wake of the propellers and was generally so loose that there was a doubt that it could be accepted in that condition.

Bow mooring gear is fitted (Vickers patent). For controlling the cable which is dropped from the ship and which is made fast to the cable from the mooring mast, there is a brake operated from the bridge so that the descent of the cable weighted with sand bags can be controlled. There is no water ballast placed in the bow, especially in connection with the bow mooring gear. The emergency ballast bags are eight in number, placed well forward and aft in groups of four, 500 pounds each. The releases for these on the bridge are knobs which are under covers of paper numbered in accordance with the bags and which must be broken before the release can be pulled. Thus there is absolutely no doubt about which ballast bag has been used. The ordinary ballast is carried in 1-ton bags. On the first trial flight of this vessel the girders to which the bags are made fast

bent and buckled. These have been double braced and no further trouble has since been experienced. There are eight such bags.

The ship, owing to the fact that the bow mooring was added after she had been built and that it was not contemplated in the original design, is now very badly out of trim in the light condition. It requires 1 ton well aft to give her correct trim. Originally it was contemplated to have her trim slightly tail down when in the light condition. The fact that she is not properly trimmed means that there must be 1 ton of ballast always kept aboard which is not disposable. There is nothing of interest in connection with gas bags and valves, with the following exceptions: In the shed during tests of gas valve controls, several wires jumped off the pulleys, which are not provided with guards, and jammed. Sandow elastic is inserted directly in the gas valves control wires and no preventers are provided in case of failing of this rubber. The opinion has been expressed that preventers should be provided, and that the winch for pulling all gas valves simultaneously was not efficient. There are a series of small drums on this winch, each one of which is engaged as desired by a small internal double-cone clutch.

The keel is small and cramped. To get to the tail it is necessary to crawl. The gun pit in the end of the tail was designed to give the minimum blind spot. It is shaped like the stern of a ship, probably one of the Vickers patents. It mounts two machine guns.

There is no interesting departure in the petrol system with the exception that the filling connection and the running-down connection from the fixed tanks is made into one fitting situated at the bottom of the tank. This saves the weight of the filling pipe, which otherwise would lead to the top of the tank. Also there are no rubber connections whatever in the petrol piping. Where the piping leaves the outer cover and where it enters the cars there are expansion and vibration coils. In view of the continual trouble experienced on *R–32* with rubber hose clogging up this is thought to be very desirable. The petrol lines to the cars are five-eighths-inch copper. Keel petrol tanks are as follows: 95 gallons capacity, 17 slip tanks, 16 fixed tanks.

The slip tanks have no bottom fitting except a small flat plate bolted on. Petrol is pumped out of the top filling connection when it is desired to transfer it. All tank vents are lead outside of the outer cover. There are scoops provided in the outer cover for creating a draft in the keel to prevent collection of petrol vapor. It is thought that this is excellent practice. All vents for the petrol in the cars are lead to the outside of the cars through a small glass-fronted fitting which enables the operator to see when the petrol is escaping. This has been commented upon before in reports made from this station with the exception that a gauze-covered funnel was

recommended. The glass-covered fittings are thought to be better. The bridge and the power cars are built of small girders in much the same manner as the hull proper. They are exceedingly light. The bridge alone without fittings weighed only 150 pounds. The suspension in all cars is along the center line, with cables at the sides to prevent swinging. Struts are provided as per sketches (b and c). On the wing cars there are only two cables outside the car and struts. Inside the struts are suspension cables. Pumping bags on all cars inclosed by fabric. This center-line suspension had the fault of allowing considerable vibration of the cars, due to variation in torque of power units, which was very noticeable on the bridge in flight. The forward end of the bridge is cased in with ply glass.

Many sections are cracked. The bomb sight was placed forward of the rudder-control wheel. The observer sits on a small folding seat and there are also two small footrests. Immediately under the bomb sight is a small window of glass, which may be opened and closed. The chart board is just aft of a large window in the bridge. This is to be moved as it is impossible to work on it with the window open. The windows on the bridge are hinged and fold outboard and away from the wind along the top of the car. They can be closed against the wind along the top of the car. They can be closed against the wind without much difficulty and are provided with stout handles. On the bridge the field of view is very good, but in the power cars it is very poor unless the gun ports are open. In the forward end of the wing cars there is a large louver for ventilation, made of light wood framing and mica. All cars are entered through a fabric-covered tube. The wing cars have duralumin hatches closing these tubes, which are closed by springs released when the person enters steps on a small platform near the upper and lower ends. There is a strong down draft from the hull when these hatches are opened, so that the danger from these tubes acting as flues in case of fire in the cars is thereby greatly reduced. The forward car is entered from the shed by a hatch which lowers in manner similar to a drawbridge. The wing cars are entered by a hatch in the bottom of the forward end of the cars. These provide excellent egress for parachute jumping. Sketches of these cars are given to show approximately the available space in each type. The engines are installed high above the bilge on pipe supports. The sump is in this manner made easily acessible and the bilge is well ventilated. The engines are of the Wolsey-Maybach type, 230 B. H. P. at 1,400 r. p. m., height 3,000 feet or 27 inches. Barometer fitted for Maybach starting, which during the trials observed worked very successfully. The engines on the two-hour full-speed test observed in flight were unable to develop their full revolutions. The average for all engines was about 1,175 r. p. m., whereas they should have made 1,400 r. p. m. This was due to the

fact that the propellers are too large for the engines. The ship under these conditions made 48½ knots. During this trial there was considerable leakage from the lubricating oil fittings, but otherwise in the forward car, where two engines are geared to one propeller (gear ratio unknown), and in the port wing car operating conditions were satisfactory. In the starboard wing car there was considerable vibration, the engine ran irregularly, and toward the end of the trial an inlet valve stuck open, causing a very heavy back fire in the induction pipe, which blew out a rubber connection, and the engine had to be shut down for the remainder of the flight. The gear in this car also made considerable noise. The wing cars are direct drive, but gears are provided for going astern and presumably one of these gears was causing the noise, by striking. Hele-Shaw clutches are used. The line shafting is built up of steel tubing riveted to flanges. Gears are provided with a gear oil pump. The usual type of cookers are provided. Lubricating oil is carried in an oblong lagged tank of about 50 gallons capacity. These are carried in the cars and are provided with warming coils. The radiators are all of the housing type and are carried in the cars. The arrangement for guiding them worked satisfactory on the trial and is shown in a sketch.

Winch hoist radiator up and down; no fittings external to car; radiator size; all same size; total of four, 37.5 feet square; length of tubes, 135 mm. hexagonal ends. In the wing cars, when the radiators are in the full-up position, the upper inboard corners are very close to the hull. During the trial the face of one of these radiators was explored with a Pitot tube. There was a difference of about 5 knots registered on the speed meter, which was used in lieu of a pressure gauge between the inboard upper corner and the outboard lower. The expansion chamber at the top of the radiators is of 5 gallons capacity. With the radiator lowered in the car the operator can squeeze around the outboard side of it in order to get to the forward end of the car. In taking the ship in and out of the shed a handling frame was used aft of the wing card. There are four sets of fittings for handling frames.

Miscellaneous.

Japanese are at present stationed at Vickers, which is constructing a twin for the Japanese Government. The envelope is inflated and the car or gondola is nearing completion. It is built along the same lines as the cars for *R-80*, the whole car being housed in if desired. This makes a very neat-looking arrangement. It is fitted for a crew of four. Petrol is carried in the gondola. A mooring mast for this ship has been constructed and is now practically complete.

Metal wing sections for a large Vickers Vimy were inspected. They are almost completed. This is said to make a very light and strong

construction. Whether or not this idea is practical or has been tested thoroughly is not known. The machine shops and the shipbuilding yards were inspected. Much work is in progress on locomotives, ships, and commercial Diesel engines. A number of small turbines were also under construction. In one shop about 40 field gun carriages for 5-inch, 60-caliber guns were being constructed. One gun was mounted on a completed carriage. The officials of the company were very friendly and were extremely courteous.

The acceptance tests for *R-80* were intended to be as follows:

Twelve hours total flying time.

Preliminary tests of controls, phones, klaxons, engines, etc , in shed; same in flight.

Endurance test of six hours at full power.

Six runs both ways over measured 10-mile course to determine greatest speed.

Run to be made over a triangle 50 miles each side.

Ascent to highest possible altitude, measuring rate of climb.

LOSS OF RIGID AIRSHIP "R–34"—REPORT ON.

(5799.)

Source: Reliable. **31 January, 1921.**

The rigid airship *R-34* left the Royal Air Force airship base during the forenoon of 27 January, 1921, on what was to be an instructional flight for a class of aerial navigators lately posted to Howden. The flight was to be 24 hours' duration.

The ship was commanded by Lieut. Drew, and the first officer, Lieut. Lucke, who was third officer of this ship on her trans-Atlantic flight. It will be noted that this was the first flight (with any responsibility) that Capt. Drew has made since 20 March, 1920, when he was acting commanding officer of the *R-34* in her flight from Pulham, Norfolk, to Howden, Yorks.

The early part of the flight was without incident, weather conditions being favorable. The flight was made out over the North Sea, but after four hours had elapsed no word was received from the ship. The regulations require that a ship shall communicate with her base every four hours, and if communication should fail, the ship shall return to her base immediately. In this instance the above regulations were not observed, which proved disastrous, since bad weather was approaching and the station desired to warn the ship back. Radio communication, however, failed, and the ship did not alter course for Howden until bad weather was actually encountered. The wind increased in force and at times the *R-34* was unable to make any headway.

The ship's position was not known with accuracy on account of the wind, and the ship was flying fairly low (1,200 feet) in order to make headway against the wind. Just after midnight the watch had just taken over, when a terrible crash occurred in the control car, followed a few seconds later by a similar crash in the after power car. To persons in the ship it felt as if she were being telescoped. It next appeared as if the after car was ablaze, but later found to be back firing, caused by the racing of the engine, the propeller having been broken off. Engines were stopped and an examination made to determine the extent of damage.

It appears that the ship had struck the Yorkshire Wold (hills of chalk formation), which in places rise over 1,000 feet above sea level, and carried away the propellers for the forward and after power cars, thus putting three engines out of commission (two engines in after power car). While this examination was proceeding, the ship drifted about 50 miles to sea. The wing engines were then started and the ship headed for Howden. Radio communication was established and Howden informed of *R–34's* plight. Destroyers were ordered out from Harwich, and later a tug was stationed in the Humber River to take the disabled ship in tow if possible.

The ship's progress was exceedingly slow, and at times she actually was going astern. After battling for nearly 16 hours against contrary winds, she finally arrived over Howden aerodrome, where over 400 men were waiting to land her. The handling of the ship was perfect as she was slowly brought down over the heads of the handling party and the trail rope dropped in exactly the right place. The handling party worked quickly and soon had the ship under control. Too much credit can not be given Capt. Drew for his excellent handling of the ship under most trying circumstances.

The first intention was to moor the ship out to the "three-wire mooring cable," but apparently, having the ship under control, the landing officer decided to attempt putting the ship in her hangar. All went well until within 200 yards of the hangar, when the wind appeared to suddenly increase in strength and become more gusty. The ship was picked up violently and with it 20 or 40 men who were hanging on to the forward and after cars, and then dashed to the ground with great violence, the control car crashing with a noise of breaking china.

There appeared to be no chance of getting the ship into the hangar so it was decided to get her back to the mooring cable. An exciting time followed, the ship being frequently dashed to the ground, and the handling party had all they could do to hold her. It was considered dangerous for the crew to remain in the ship and consequently they were ordered to abandon ship, which they did by twos and

threes as the control car came near the ground. After about an hour's struggle, the mooring point was regained, but the ship's mooring point had become severely strained by the constant hauling, several girders had given way, and the outer cover torn. The rudder had become jammed in a hard-over position, causing the ship to charge "off the wind" continually, thus increasing the difficulties of handling.

The ship was finally secured to the mooring cable, but as this took the strain, girders began to snap and it looked as if the ship would be lost. The forward gas bags were punctured, however, and as the gas was lost the forward part of the ship pounded on the ground with the result that the forward part of the framework was almost entirely broken up.

Conclusions.

From the above it is believed that the following observations are pertinent:

(*a*) Communication with the base is vitally necessary for the safety of the ship. If this should fail the ship should return at once.

(*b*) An instrument for detecting the actual height of the ship above ground is very desirable, and research along this line should be undertaken.

(*c*) The mooring point in the ship must be built stronger; attention invited to failure of this in America, July, 1919.

(*d*) Mooring cable appears to be of little value.

(*e*) Mooring mast is apparently a step in the right direction. This should be perfected. Tests with respect to this with *R–33* should be watched with interest.

(*f*) For getting ship into hangar, rails with trolleys (German method) appear very desirable. These should extend at least a half mile from the hangar. It is believed that they should also be at right angles to the axis of the hangar and form an easy curve into the hangar, so that no matter what the direction of the wind, the ship could be landed near the rails. It is believed that the inclosed sketch gives an idea of this method.

(*g*) Landing bollards should be provided in close proximity to the hangars and near rail mentioned in (*f*).

Undoubtedly, the most important considerations is that of the mooring mast. It is believed that this mast is now an accomplished fact and one should be erected wherever rigid airships will be expected to land.

GREAT BRITAIN. AIRSHIPS IN THE ROYAL AIR FORCE.

(6964.)

Source: Reliable. **8 February, 1921.**

A great deal of discussion has been taking place in the British press for several days past on the recent decision of the Air Ministry to close down the last of the rigid airship operating stations, viz., Royal Air Force airship base, Howden, Yorkshire, as soon as the training of American personnel is completed. It might be supposed that this decision was based on the recent loss of the rigid airship *R–34*, but such is not the case.

In a conference with representatives of the Air Ministry, several weeks previous to the wreck of the *R–34*, it was stated that it was very desirable to close down the operating station at Howden as soon as possible purely on account of the fact that the country, in its present economic state, can not afford to maintain it.

Airship officers of experience were of the opinion that the best results for the future of rigid airships would be obtained by concentrating all efforts on making them a commercial success, and consequently the Royal Air Force airship base, Pulham, Norfolk, has been turned over to the civil aviation department, and here experiments will be carried on with the two former German airships *L–64* and *L–71*, the *R–36*, *R–80*, and the *R–33*. Experienced airship personnel of the Royal Air Force have been loaned to the civil aviation department for this purpose.

It is expected to make long airship flights from Pulham to Egypt and return. Mooring masts experiments are to be continued over a period of three months, the *R–33* being the ship detailed for this purpose. It is intended to secure this ship to the Vickers mooring tower erected at Pulham, and experiments with this tower are to be conducted. It is intended that the ship shall be released from this tower in nearly all kinds of weather, and after a short flight an attempt will be made to secure this ship to the tower with a limited number of enlisted personnel (about six). A landing party will, however, be kept standing by for use in case of emergency.

As previously stated, these experiments will continue over a period of three months, during which time the value of the mooring tower should be fully determined.

It is interesting to note that the decision of the Air Ministry to close down the airship section of the Royal Air Force was not given out to the press until February 1, and it caused a great deal of astonishment in service and civil flying circles. An outsider might naturally suppose that the recent loss of the *R–34* had some effect on this decision.

A recent editorial in the London Times appeared to have the inspiration of official sources and stated that among other things

"the airship side of the Royal Air Force was to be extinguished because the country could not afford to maintain it." It has been stated that the real reason for closing down the airship section of the Royal Air Force was not an economic one but the result of a decision made by the Admiralty that *rigid airships were of no further use to the fleet.* It will be remembered that when a separate air force was instituted the Admiralty would only agree to give up the control of the airship section provided that certain airships were kept in commission for use with the fleet. Consequently, the decision that they are of no further value was somewhat in the nature of a bomb dropped in the airship section.

Experienced airship officers are still convinced of the value of the rigid airship and apparently are determined to make a success of them commercially.

The loss of the *R–34* has caused some interesting discussions regarding the value of the rigid, and among them a German publication quotes the official war records relating to the 83 Zeppelins in commission during the war, of which 66 are accounted for by the German Government as follows:

"Thirty-four shot down and destroyed, 2 accidently destroyed in entering or leaving the hangars, 13 caught fire accidently, 10 destroyed through emergency landing, 4 stranded and destroyed owing to failure of engines, 1 destroyed by lightning, 1 broke loose from mooring and disappeared entirely, and 1 fell into the North Sea."

This article was ostensibly written by opponents of the airship, and it further states that the German authorities decided to give them up as a bad job for military purposes before the war ended.

AEROPLANE CONSTRUCTION WOOD VERSUS DURALUMIN VERSUS H. T. STEEL.

(14136.)

Source: Reliable. **31 January, 1921.**

There are three aeroplanes construction firms in Great Britain who are engaged in the manufacture of steel aeroplanes. These three firms are: Steel Wing Co. (Ltd.), of London; Boulton & Paul, Norwich; and Armstrong Whitworth Co., of Newcastle.

The work done by these three firms in connection with aeroplanes of steel construction is under some form of control of the Air Ministry and all orders to date emanate from the Air Ministry.

There are at least two firms in England who have done a large amount of work in connection with the use of duralumin for aeroplane construction. These firms are Vickers & Co. (Ltd.) and Short Bros., of Rochester. Short Bros. exhibited in the Aero Show in London last summer an all-duralumin flying boat, and some effort

was made by Mr. Short to interest the United States naval representatives in this flying boat with the idea of its purchase by the Navy Department. As the boat had not been flown at that time, it was considered desirable to await developments to see whether this type of construction would prove satisfactory. This particular flying boat has been the subject of considerable controversy between the Air Ministry and Shorts with the ultimate result that the Air Ministry purchased the flying boat. It is unofficially understood that the purchase was authorized by the director of research after a certain amount of controversy with other officials of the Air Ministry. This flying boat is now at Grain and it has been flown a number of times. No reliable data is available with regard to these flights except that the flights were successful. However, it is understood that the Air Ministry has not placed any further orders for this type of boat and, furthermore, that no orders are being placed for duralumin aeroplanes. This information does not check up with information received from Shorts to the effect that they had additional orders for duralumin planes from the Air Ministry. It is understood that the Air Ministry does not approve at the present time of the use of duralumin for struts, spars, or girders in aeroplane construction. Furthermore, there is an element of doubt as to whether the duralumin wing covering will prove satisfactory in service. While this information came from those engaged in all steel construction and, therefore, might be prejudiced, it is believed that the information is generally correct.

An engineer at Boulton & Paul's stated that "duralumin is a wash out." The difficulties with regard to duralumin appear to be in connection with vibration tests and deterioration of the material when exposed for prolonged periods to the weather or to salt water. There has always been considerable doubt as to whether duralumin would stand up under the vibrations encountered in the use of aeroplanes, but it has been supposed that this metal was quite free from any form of corrosion.

So far as static tests are concerned, it is pretty accurately known that the tests carried out by Vickers in their duralumin construction were quite satisfactory. It is not definitely known, but it is understood that the vibration tests were not satisfactory.

The general criticisms of duralumin outlined herein were confirmed by one of the directors of the Steel Wing Co.

Mr. North, of Boulton & Paul's, stated that they were producing aeroplane spars of high tensile steel that were 25 per cent less in weight than hollow spruce spars of equivalent strength. He is also of the opinion that this weight can be still further reduced or the factor of safety increased when the manufacturers of high tensile steel strip produce the best product of which they are capable.

In other words, there will be a saving of weight and an added factor of safety by using high tensile steel strip in lieu of wood. Mr. North stated that the weight of high tensile steel strip construction was the same as the weight of duralumin for equivalent strength. With the expected improvement in the manufacture of high tensile steel strip there will be a saving in weight over duralumin.

It is generally stated that while duralumin has a nominal tensile strength of 25 tons, it is not safe to figure on more than 18 to 20 on account of the lack of uniformity of the material. High tensile strip steel, on the other hand, may be considered as having a reliable tensile strength of 70 to 80 tons with a prospect of obtaining a uniform material with a strength of 90 to 110 tons.

The question of duralumin versus steel construction for aeroplanes is a controversial one, and it is appreciated that many of the arguments submitted in the foregoing discussion emanated from those directly interested in steel construction. In view of the fact, however, that the Air Ministry officials are extremely reticent to discuss the merits and demerits of duralumin planes, it appears as if Short Bros.' efforts had not been particularly successful. Secondly, all the evidence available at the present time is in favor of the steel construction so far as all-metal planes are concerned.

R. A. E. BUBBLE SEXTANT.

(10791.)

Source: Reliable. **10 January 1921.**

This type of sextant evolved by the design staff of the Royal Aernonautical Establishment is a complete departure from the ordinary marine sextant and is especially adapted for air navigation

A sketch showing the principle on which the instrument works and one of the instrument itself are attached.

The purpose of this sextant is to enable a sight to be taken when the natural horizon is not available. To cope with this situation resort is had to a gravity-controlled bubble to give the vertical.

The instrument consists primarily of a bubble chamber to which the framework is mounted. A combined index and object glass is hinged to the framework and so mounted that the image of the bubble is reflected from its surface. This glass plate can be set at different angles by the revolution of a spiral cam, which is actuated with the hand by turning a cylindrical drum. A scale graduated in degrees and minutes of arc is also attached to this spiral cam.

The bubble chamber contains gasoline (or alcohol) and has a flexible wall which, in the latest type, may be extended or compressed by means of a screw, and thus enlarging or diminishing the gasoline vapor bubble.

The bubble is formed under a concaved glass window, as shown in sketch, and it may be illuminated at night by a lamp which is shown in sketch 2. Lamp bulbs giving different intensity of illumination are included with the instrument. For use with stars, care must be taken not to have too much light.

As shown in sketch 1, the image of the bubble is reflected by means of a prism on to the object glass, which, as before stated, consists of a plain glass plate and acts as a semireflector. The image of the object observed is seen reflected on this same glass plate, and it is brought into coincidence with the bubble by revolving the spiral cam, the angle of inclination of the glass being registered on the scale, and hence the altitude of the object observed.

No corrections of any kind need be applied to the altitude thus observed unless it be an index correction. In a good instrument an index error is rarely found. There are two available methods of determining this error. The first and perhaps the best method is to suspend a mirror vertically and then take a reading of the image of the observer's eye in the mirror. The reading on the scale should be zero, and if not, it is an index error. The second method is to observe the horizon and bring it on the bubble (centered in the window, of course), and read the angle of dip. Then compare this reading with the dip of the horizon as given in the tables for the height of eye used. It appears that there is greater chance of personal error in this method.

When using this instrument in an airship, the greatest accuracy will be obtained when the observations are taken either directly ahead or astern, since even if the ship does yaw, its effect will be to move the bubble from side to side, due to acceleration, but will have very little, if any, effect on the altitude observed.

On the other hand, if the observations are taken athwartships, the acceleration will cause an error in the observation, known as the "acceleration error," and for this reason a number of observations should be taken, so that by taking a mean of these observations the error is reduced within manageable limits. Even under very bad conditions, a position line should be obtained not more than 20 miles in error.

This type of sextant is now coming into use in the Royal Air Force, and very good results are being obtained with it.

GREAT BRITAIN AVIATION, NOTES ON.

(6736.)

Source: Reliable. **7 February, 1921.**

"N–4" Type Aeroplane.

The hull of this flying boat is approximately 66 feet in length, including rudders, and the lines of the hull are very similar to the hull of the *P–5* flying boat. The hull is built to Air Ministry design by the firm of Fife, yacht builders on the Clyde, and is a very neat piece of work. The specifications for this flying boat are as follows:

(*a*) The top area of the planes is 2,900 square feet.
(*b*) Area of tail is 350 square feet.
(*c*) Area of rudders, 50 square feet.
(*d*) Area of fins, 50 square feet.
(*e*) Area of elevators, 50 square feet.
(*f*) Area of each aileron, 83 square feet.
(*g*) Span, 139 feet.
(*h*) The height over all, 29 feet 6 inches.
(*i*) Length over all, 66 feet.
(*j*) Chord, 12 feet 6 inches.
(*k*) Estimated full speed, 110 miles per hour.
(*l*) Engines, four Rolls Royce Condors, 600 horsepower each, mounted in tandem between the wings.
(*m*) The displacement of this boat, with full load, is estimated at 32,000 pounds.

The hull is not divided into water-tight compartments, and the walk way runs along the whole length. Some idea of the size of this boat may be obtained from the fact that a man may walk erect the whole length of this walk way. Petrol tanks are secured in cradles on each side of this walk way. It is also intended to provide sleeping accommodations for the crew. Aft, in the tail, two large portholes are provided with water-tight doors, one on each side, such that four machine guns may be mounted there.

Although the complete machine has been received at Grain, no attempt has as yet been made to assemble her. It will probably be three months before final assembly.

General Information.

It was stated that experiments were being carried on whereby a machine would land on a cable instead of on the deck of a vessel. The Air Ministry has recently directed that further experiments along these lines be discontinued.

It has been stated that since the organization of the independent air force, naval aviation in Great Britain has remained at a standstill. Accounts of our fleet aviation detachments in their recent flights to Panama with the fleets have been printed in the British press and have created a great deal of enthusiasm in service circles.

Short's All—Metal Plane.

The Short's all-metal plane was put through tests at this station and, according to some, these tests proved satisfactory. It was stated that although up to the present no trouble had been experienced with the Duralumin wing covering it probably would not stand up under vibration. Altogether, this machine was flown between three and four hours.

It was also stated that the engine mounting was not particularly desirable because it was very difficult to get at the engine for minor repairs. This plane was sent to the Royal Aircraft Factory at Farnborough for the information of the design staff the day previous to this visit.

PROPOSED GERMAN AERIAL POLICE.

(12756.)

Source: Reliable. **9 February, 1921.**

An aerial police was contemplated by the German Government, with a proposed organization as shown below. Due to a decision by council of ambassadors in December, 1920, which does not permit the arming of German police forces with airplanes as weapons, this scheme has not been put into effect.

Control.

The central control of this organization for purposes of coordination of activities of various units was to be in the hands of Geheimrat Schmidt in the federal ministry of the interior, Berlin.

No national police force is permitted by the terms of the Versailles treaty and the interpretations of same by the interallied control commission. Each individual German State, however, has its own police. The aerial work of these different police units was to be indirectly controlled by the above-mentioned central office.

Duty.

The following are the general duties of the aerial police, which, of course, vary somewhat in different localities:

A. In case of uprisings:

(*a*) To reconnoiter the positions and movements of the insurgents.

(*b*) To maintain liaison between various police bodies operating together.

(*c*) To drop circulars and information.

(*d*) To transmit urgent police and Government decrees.

(*e*) To transport Government representatives in emergency or when other means of transportation are interfered with by reason of strikes or uprisings.

B. Frontier and customs guards:

(*a*) To assist above-mentioned guards wherever practicable.

(*b*) To prevent illegal export and import of material or merchandise.

(*c*) To prevent escape or entrance of travelers without necessary credentials.

C. In peace time:

(*a*) To cooperate with criminal police in conveying them to outlying districts, or otherwise in pursuit of criminals.

(*b*) To transport police or Government officials in urgent cases.

(*c*) To assist in scientific development of meteorology.

(*d*) To supervise aerial traffic.

(*e*) To assist harbor police in control of seaway and harbor traffic.

(*f*) To assist in execution of fishery laws.

(*g*) For coast survey.

(*h*) To assist harbor pilots.

(*i*) To assist ships in distress.

(*j*) To control flight permissions, machine markings, cargoes, crews, passengers, and necessary machine records.

Organization.

The proposed organization for Prussia serves as a model for the other States. Each is under the control of the State police authorities and has one head office in charge of all districts.

Prussia is divided into seven police districts. For each district there is an aerial police section, consisting of two divisions—Flugstaum and Flugwache. The Flugstaum (aerial depot battalion) will be furnished with airplanes and seaplanes and will have all duties mentioned above that involve flying. The Flugwache (aerial guards without airplanes) will have particularly the duties mentioned under the last item above.

Material.

Each air police section, as defined above, will have 4–6 airplanes. The selection of types will be made from whatever the German aircraft industry is permitted to build in the near future, no special police types are considered. Single seaters will be used for economy in fuel consumption in accordance with nature of mission; otherwise plural seaters will be used.

Airplanes are to be unarmed.

Landing Fields.

It is intended to establish the following fields:

A. Prussia:

Konigsberg.
Breslau.
Berlin (Johannisthal).
Stettin.
Halberstadt.
Wunster in Westphalia.
Kiel (Holtenau) for seaplanes.

B. Bavaria:

Schleissheim near Munchen.
Furth.

C. Saxony:
Dresden.
D. Wurtemburg:
Boblingen.
E. Micklenburg-Schwerin:
Waruemunde (Schwerin-Gorries to be given up).
F. Hamburg:
Hamburg-Fuhlbuttel (Lubeck-Blankensee to be given up).

Personnel.

The personnel of the air police is to be recruited, organized, and handled in the same manner as all other police bodies. The necessary aviational training will be obtained from the aircraft factories, flight companies, and private flying schools when same are in operation again. The number of such personnel is not known.

H. M. S. "ARGUS."

(5355.)

Source: Reliable. **28 February, 1921.**

This ship was taken over by the British Navy while building for an Italian passenger line and converted for aviation service.

Length.—530 feet (paced).

Power.—Four Parsons type turbines, driving four propellers.

Speed.—Maximum, 22 knots. This speed is used when launching or landing planes, the ship steaming directly into the eye of the wind.

Flying deck.—Extends from stem to stern, sloping downward slightly forward and aft.

Elevator.—An electrically operated elevator raises planes from the hold to the flying deck. The platform of this elevator is part of the flying deck when a plane is getting away.

Pilot house.—Raised and lowered by hydraulic power. When housed, its roof is even with the flying deck.

Masts.—Operated by hydraulic power. Antenna fitted with springs, which prevent slack while the masts are in the process of being lowered. When pilot house and masts are housed there are no projections whatever above the flying deck.

Stern.—The poop deck of the *Argus* is low. It is used to land flying boats, which are raised from the water by two electrically driven cranes, one either side of the forward end of poop deck. Ample space is afforded between the flying deck and poop deck for handling seaplanes.

Disposition of Flue Gases.

Smoke and flue may be ejected (1) through a fan-shaped stack, the terminal opening of which is at the after end of the flying deck and just below same (this opening is as long as the flying deck is wide and about 2 feet in width); (2) by means of blowers, port and starboard, located just forward of the poop deck, used independently or simultaneously.

Flue Gas Absorbing Device.

A system of water-sprayed chambers is of sufficient capacity to entirely absorb or contain all furnace gases for a space of two and one-half minutes when steaming at maximum speed.

Landing Device.

Observation from an elevation disclosed an arrangement of converging wires commencing well aft on the flying deck and leading to a position somewhat forward of amidships. When observed, these wires lay flat on the deck. An officer remarked that these wires were raised, when landing a plane, as soon as possible after the wheels of the plane had passed the after end of the wires. The following remark was also made by a British officer of the *Argus:* "When a ship lands she is steered (by hand or by aforesaid converging wires) into a pit, where grab hooks engage axles of the ship at both ends, which hooks are attached to wire rope wound on spring-controlled drums." The "pit" referred to may be a depression in the deck, at the position to which any plane landing both wheels on any part of the after flying deck would be guided by the wires. When observed, the flying deck of the ship appeared flush. There was certainly no marked depression. It is assumed that landing is accomplished as follows:

The ship steams at full speed into the eye of the wind. As the plane approaches, the smoke-absorbing device is placed in operation; a signal is made to the plane, whereupon the pilot lands on the flying deck as far aft as possible. When the wheels of the plane are past the proper point on the flying deck the wires are raised by the control officer on the ship. The plane is directed by the wires to the position (or to the "pit") where the grab hooks catch the axles of the plane. The momentum of the plane is then absorbed by the springs or weights as rapidly as is consistent with safety. In case a plane goes over the side, the pilot and observer are instructed to jump to the flying deck. In the course of operation of this device it was stated that five planes had been lost.

ITALIAN NAVY AVIATION SCHOOL.

(14195.)

Source: Reliable. **2 February, 1921.**

Location.

The navy aviation school near Taranto is situated in an ideal locality on the inclosed Mare Piccolo. The climate and weather conditions are the best possible in Italy, while the water of the inclosed bay is usually calm and quiet. It is about 2 miles to the east of Taranto, with which town there is communication by a narrow-gauge railroad.

New School Building.

A very pretentious new school building of stone and marble was started and it is in a partial state of completion. Work on this building has, however, been stopped by reasons of economy. The plan of the building includes school and lecture rooms and quarters for the staff of instructors and also for the student aviators—officers and men. The completion of the building is now indefinite.

Equipment.

The equipment of the school is not extensive but apparently sufficient for efficient work and training. The planes used in training are of three types: *Fba*, *Fiat*, and *Macchi Varese 18*. The majority of the planes are of the latter type. In all there are about 30 planes. They are stowed in sheds or hangars near the beach, the sides of the sheds being open toward the water. The machines are transported about 50 yards from the sheds to the shallow shelving beach by means of small trucks running on tracks. Each truck is fitted with a turntable, so the machine can be oriented while on the truck, either for entry into the shed or launching in the water. There are several floats and small landing piers. Several old water sleds are seen which are used for the first steps of the instruction.

Students.

At present there are 40 students at the school, of which 14 are officers and 26 are enlisted men. The course of instruction is the same for both. Officers qualify as mechanics, aviators, and observers; the men as mechanics and aviators. The course of instruction takes from three to five months, depending upon the personality and ability of the student. Officers, as a rule, require less time than the men. The first qualification is usually obtained after about 20 lessons. This qualification consists in piloting a machine in the air for one hour, during which time a certain distance of flight is required. A second qualification requires generally another 15 lessons. It consists of a three-hour flight in which three times the distance of the one-hour flight must be covered. The qualification for observer, as nearly as could be learned, consists in ability to recognize and identify various terrestrial objects, to make estimates of distance, take photographs, and make sketches.

Staff of Instructors.

The commanding officer is a qualified aviator with the rank of commander. He occupies very comfortable married officers' quarters at a short distance from the grounds. There are three commissioned assistants and about 15 men. The scope of the school now appears only to accomplish qualification of flyers. It is the only naval school in Italy. The Lake Bolsena war school has been abandoned.

H. M. S. "EAGLE"—AIRPLANE CARRIER.

(5355-E.)

Source: Reliable. **3 February, 1921.**

At the National Physical Laboratory a model of the airplane carrier *Eagle* was seen. This model had been used in conducting experiments in the wind tunnel at the National Physical Laboratory. The following information was obtained:

(*a*) The great difficulty with the *Eagle* is in connection with flying on, and much of the difficulty is caused by the structure on the starboard side of the ship, which carries the bridge, pilot house, funnels, etc., and which extends above the flying-on deck. This structure accounts for the erratic air currents encountered by aircraft. As a result of the experiments conducted at the National Physical Laboratory, it was decided to stream line all portions of this "island" structure above the flying deck. When all portions of these upper works were stream lined on the model, the results were much more satisfactory.

(*b*) Various experiments were made with regard to the after part of the flying deck both as regards the angle of inclination and as regards the length of overhang. The most suitable angle appears to be between 5° and 8° downward slope. It was stated that there was no advantage in having the flying deck extend beyond the after end of the main deck of the vessel. As a matter of fact, the model had the flying deck cut off slightly forward of a perpendicular from the after end of the transom of the main deck, and it has been stated that this was the way the *Eagle* was actually constructed, although photographs of the vessel give an impression that the flying deck overhangs the after end of the transom of the main deck. For the benefit of the pilot flying on, it would probably be desirable to have the flying deck extend farther aft than the main deck.

It is understood that the *Eagle* is at Portsmouth at the present time completing her machinery installation. The status of this vessel has always been in doubt as the Chilians continued their endeavors over a long period of time to have the vessel reconverted and turned over to them. It has now been finally decided to retain this vessel in the British Navy and to compensate the Chilians in some other way than deliver this vessel to them after reconverting her. This indefinite status of the *Eagle* accounts in part for her short periods with the fleet and long periods at the dockyard, the vessel never having actually been completed. It is believed that some of the stream lining of the upper works referred to above is being undertaken during the present stay of the *Eagle* at the Portsmouth Yard.

ITALY, AVIATION.

(4856.)

Source: Reliable. **16 March, 1921.**

On 15 March, 1921, the semirigid dirigible *Roma*, recently purchased by the United States Army, made an eight-hour continuous flight with 53 people aboard, among whom were the American Army officers and crew who are now in Rome for the purpose of disassembling and taking back to America the *Roma*. On this flight the American flag was flown from the bow and the Italian flag from the stern. The assistant naval attaché was a passenger aboard during the flight.

The start was made from the Ciampino field, near Rome, at 9 a. m.; then to Terracina, Capua, over Naples, the Bay of Naples, Capri; then back up the coast over Nettuno, Anzio, Ostia; then up the Tiber, over Rome, and back to the field at Ciampino, where a perfect landing was made at 5 p. m., just eight hours after the start.

During the trip the average speed was about 90 km. hour. At first all six engines were used, but during the greater part of the trip only four were used. One engine was put out of commission by the breaking of a feed line in the lubrication system. This could have been easily repaired in the air but was not.

As a demonstration of the ability to do so, a propeller was changed during the flight, one of the spares carried aboard being substituted.

A luncheon was served in the passenger cabin, where 16 people sat down to a table and were served very comfortably.

INFORMATION IN REGARD TO GREAT BRITAIN'S AIRPLANE CARRIERS.

(5355.)

Source: Reliable. **11 March, 1921.**

A flat deck, retangular in shape and as large as practicable, would be the most satisfactory type of deck to install on an aircraft carrier. It is desirable to have the forward part of this deck slope downward at an angle of about 5° to facilitate flying off. There is no particular advantage in having the after part of the deck slope down nor is there any particular advantage in having the after part of the deck overhang the counter of the ship except for the psychological effect on a pilot.

Palisades are of no particular use. They were originally installed on aircraft carriers as a windbreak in assembling, mounting, and repairing machines on a flying deck. They have some theoretical value in keeping an airplane from going over the side, but if mounted they are apt to damage the wings of the machine if used as a preventer. If installed at all, they should be capable of being raised and lowered by power in a very short time. They are not really necessary.

The only arresting gear necessary is the fore-and-aft wire installation with sister hooks on the undercarriage of the airplane. No transverse arresting gear has been found satisfactory.

Flying on and flying off by a number of different types of machines were generally successful. However, during the month or six weeks the trials were conducted, the pilots succeeded in damaging to a greater or less extent most of the machines with which the trials were made.

No torpedo planes were seen to fly on or fly off.

Much of the damage caused in flying on was due to the planes being landed too hard on the deck.

SEAPLANES, ITALY.

(9804.)

Source: Reliable. **23 February, 1921.**

This machine was constructed for speed in a nonstop flight of 200 nautical miles, carrying a load of 600 pounds, in addition to pilot and necessary fuel. Consideration also had to be given to the required navigability test in the water in open sea.

The characteristics of this seaplane are as follows:

Engine	Fiat A 14, 700 H. P.
Type	Biplane flying boat.
Length	11 m.
Span	15.80 m.
Supporting surface	46 sq. m.
Dimensions of boat:	
Maximum width	1.50 m.
Maximum length	10.30 m.
Immersion	0.50 m.
Propeller	Macchi 4-blade.
Pitch	0.3.
Diameter	3.30.

No information concerning its performance has been obtained except that the results were satisfactory. It will be used in seaplane competition during the spring and summer.

REVOLVING AIRSHIP SHEDS VERSUS "MOORING OUT" OF AIRSHIPS.

(4587.)

Source: Reliable. **23 February, 1921.**

The tendency in England in developing a solution of the difficulty of handling large, rigid airships on the ground was decidedly toward the development of a "mooring-out" system, preferably some system in which the nose of the airship is secured to a mast and the stern of the ship permitted to swing with the wind. The ship is thus kept well clear of the ground, with resulting decrease of possible

damage to cars and fins, and because the ship can swing freely, the least possible area is opposed directly to the force of the wind and the strain of holding the ship is cut down to the minimum amount. The number of men required to handle the ship on the ground is greatly decreased. Furthermore, the ship can easily be brought to, or released from, such a mooring mast on days when the wind is blowing with sufficient force in a direction normal to the axis of the shed, or up to 45° either side of such normal, to prevent any attempt to take the ship into or out of the shed. The periods of usefulness of the ship are therefore much greater when used from a mooring mast than when housed after each trip in a stationary shed.

The Zeppelin concern believe that the regular use of any mooring-mast system is fundamentally wrong. They are convinced that the increase in dead weight of the ship to give it the structural weight, according to their figures, is 10 per cent of the total dead weight of the ship's frame. This large increase is considered necessary to protect the ship while at a mast from sudden gusts, 15° to 20° either side of the main wind direction, that first strike the ship "on the bow" and cause a tremendous bending moment there before the whole ship has felt the effect of the gust and swung into line with the new, temporary wind direction.

Since the mooring-mast system is undesirable for the reason given above, the Zeppelin concern advocate very strongly the use of revolving airship sheds instead of stationary sheds, so that the shed may be turned until its axis is in the wind direction before a ship is taken into or out of the shed. A ground wind of 15 miles an hour may prevent a ship from being taken out of a stationary shed, although that wind is negligible after the ship is once in the air. Handling rails and trolleys are valuable, in that the number of men required to handle the ship is less, but are not considered sufficient in their present development to handle a ship broadside to the wind around a shed.

(NOTE.—The following telegram was received showing viewpoint of British regarding mooring mast: "Navy personnel here strongly recommend the immediate construction of mooring mast for operation of airships with fleet. Mooring-mast experiment test proved so successful that low mooring gear be used to outfit *Rone*, as it is considered essential.")

"R-33" MOORING MAST TRIALS.

(6964.)

Source: Reliable. **19 February, 1921.**

A previous report stated that the rigid airship *R-33* had arrived at the Royal Air Force airship base, Pulham, Norfolk (the headquarters of the airship section of the civil aviation), to undergo experiments with the mooring mast.

A request was made to the Air Ministry for representatives of this office to visit Pulham, and although this request was granted, such permission was withdrawn the day previous to the intended visit and a statement issued by the Air Ministry that such a visit would not be convenient at present.

It was learned from officials of the air force that the *R–33* had met with a slight accident to her bow mooring arrangement while attempting to secure to the mast. These officials stated that through an error in judgment the bow of the ship was carried in to the mast, breaking some of the structural parts in such a way as to necessitate new castings.

The officials at Pulham at first intended to take the ship into the hangar in order to repair the damage, but later decided to make such repairs at the mast.

It is understood that the airship works at Bedford have been requested to fabricate the materials for the repairs necessary, which would give the impression that the damage was rather extensive.

This accident is undoubtedly the reason for refusing permission to visit Pulham, especially in view of the fact that our representative was told that permission to make such a visit would be granted in about a month's time.

It was also learned that with this one exception the mooring mast experiments have been most successful and that during the fortnight this ship has been at the mast she has required very little attention, no ballasting up of any kind, and the releasing of the ship from the mast accomplished without any difficulty. Securing the ship to the mast apparently required the most skill and will come with experience.

AIRPLANES, JAPAN.

(3439.)

Source: Reliable. **9 March, 1921.**

Following the Rome-Tokio airplane flight, the firm of Ansaldo & Co. (Genoa) built and delivered to the Japanese Government either 8 or 10 *SVA* airplanes. These planes are of the reconnoissance type and capable of 300 km. an hour. The planes delivered to Japan are school planes.

The *SVA* airplane is designed and built by the Ansaldo Co. at their Turin, Italy, branch.

JAPAN, NAVY—AVIATION.

(9318.)

Source: Reliable. **3 March, 1921.**

The Japanese Government plans to establish an aviation corps, including three hangars, with six planes each, in Korea, within the next year as a part of the defense arrangements.

The *Mishima Maru* arrived at Kobe February 11, with a consignment of 200 cases of airplane parts, billed to the Yokosuka naval station. They were described as hydraulic airplane parts and were all shipped at Antwerp under personal supervision of several representatives of the Japanese Navy. Utmost care was directed for their transportation by the ship's men during the trip.

Three technical engineers left Yokosuka for a certain point on the coast of Ise Bay for the purpose of making a working survey of the construction of a naval airdrome. More than 100,000 tsubo has been purchased by the Japanese Navy for the establishment of a flying station at that strategic point.

JAPAN, NAVAL AVIATION (GENERAL).

(9318-G.)

Source: Reliable. **18 February, 1921.**

One Zeppelin, 38 seaplanes, and about 400 aeroplanes' motors arrived in Japan the first part of February from Germany. They left Germany during December, 1920.

The Zeppelin will be assigned to Kasumigaura, said to be *L–37* model.

It is reported that a Zeppelin, latest style, hangar (framework 1;500 tons weight, large enough for two dirigibles) is now on the way from Germany.

AIRCRAFT PRODUCED IN HOLLAND DURING 1920.

(6178.)

Source: Reliable. **22 February, 1921.**

The following is a close approximation of the numbers of aircraft (heavier-than-air) produced for different purposes in Holland during 1920:

Naval	21
Military	142
Commercial (converted naval types)	45
Commercial (new types)	4
Total	212

JAPAN, NAVAL SHIPS.

(12484.)

Source: Reliable. **3 March, 1921**

The airplane carrier *Hoshu*, now building at Asano Shipyard, near Yokohama, will be launched about September, 1921. Her displacement is to be slightly greater than the *Langley*, about 21,000 tons, and she is designed for a speed that will enable her to cruise at any fleet speed.

ORDNANCE.

EXPERIMENTS WITH AND FIRING TRIALS OF 1-POUNDER MARK IV VICKERS GUN FOR "ZR–2" ("R–38").

(6185.)

Source: Reliable. **14 February, 1921.**

Several experiments have been carried out by the marine and armament experimental establishment of the Royal Air Force, Isle of Grain, Kent, for the purpose of determining the danger from firing a 1-pounder gun from the gun platform on the top of service rigid airships.

Firing trials of the 1-pounder Mark V Vickers gun for the *ZR–2* (*R–38*) were also carried out.

The following results of the various experiments and firing trials were obtained:

(A) *First operation.*—A tube was connected to a hydrogen bottle and placed 20 inches forward and 2 inches below the muzzle of the gun. A weak mixture of hydrogen and air was allowed to pass in front of the muzzle of the gun and one round fired without causing ignition.

Second operation.—Similar conditions but with a stronger mixture of hydrogen and air. One round fired without causing ignition.

Third operation.—Tube secured to the barrel of the gun with the end projecting in front of the muzzle, the prevailing wind tending to blow the hydrogen down the barrel. A weak mixture was allowed to flow and one round fired without causing ignition.

Fourth operation.—A strong mixture was allowed to flow and one round fired without causing ignition.

Fifth operation.—Similar conditions with a strong mixture and firing automatically. The gun failed on six succeeding occasions to function correctly and in each instance only two rounds functioned automatically.

In the last attempt the projectile was left in the belt, the carriage case being withdrawn by the lock and thus loaded into the gun as a "blank round." The untamped charge on firing naturally burned slowly, resulting in a large flame at the muzzle, which ignited the hydrogen. The cause of this separation of the projectile and cartridge case in the action of automatic loading was that the ammunition being used had been made up into complete rounds without proper tools, the cartridge cases being indented into the cannelure of the projectile very roughly and imperfectly. The trial was then discontinued and arrangements made for ammunition for future trials

to be made up strictly in accordance with specification and properly inserted in the belts with a belt-filling machine. Further trials with ammunition correctly made up to test the automatic action of the gun were carried out on October 12, 1920, in the presence of Maj. Thompson and Capt. Hill, when the crank spring was adjusted gradually from 25 to 29½ pounds. The following results were obtained:

Burst No.	Remarks.
1	Automatic action failed, due to faulty feed; 1 round fired.
2	Two rounds fired; automatic action failed; recoil too short.
3	Three rounds fired; automatic action failed; recoil too short.
4	Two rounds fired; automatic action failed; faulty feed.
5	One round fired; automatic action failed; faulty cap.
6	Three rounds fired; automatic action failed; recoil too short.
7	Two rounds fired; automatic action failed; faulty feed.

The trials for automatic action were continued on October 18, 1920. The buffer cylinder was filled with pure P.924, and the crank spring adjusted to 31 pounds.

Burst No.	Remarks.
1	One round fired; recoil too long.
2	More liquid was added to the buffer cylinder by elevating the gun during filling; 1 round fired; recoil too long.
3	More liquid added to buffer cylinder; 1 round fired; recoil, 7½ inches.
4	Six rounds fired automatically; gun functioned correctly.

The trials for ignition of hydrogen were continued on October 29, 1920, in the presence of Maj. Thompson and Capt. Hill.

A tube connected to the hydrogen bottle was secured under the gun barrel, the end of the tube being immediately in front of the muzzle and the prevailing wind tending to blow the mixture of hydrogen and air down the gun barrel.

The results were as follows:

Operation No.	Remarks.
1	A weak mixture of hydrogen and air was allowed to pass in front of the muzzle and one round fired; no ignition of the hydrogen took place.
2	Conditions similar with a stronger mixture; one round fired; no ignition.
3	Conditions similar with a weak mixture; 10 rounds fired automatically; gun functioned correctly; no ignition.
4	Conditions similar with strong mixture; 10 rounds fired automatically; gun functioned correctly; no ignition.
5	Conditions as for 4; 10 rounds fired automatically and no ignition took place.
6	Conditions as for 3; 10 rounds fired automatically; gun functioned correctly and no ignition took place.

Remarks.

1. With a gun using belt feed it is necessary that the ammunition should b made up strictly in accordance with specification with the cartridge cases securely indented into the cannelure in the projectile and the rounds themselves inserted into the belt with the standard belt-filling machine.

2. The side cams on the crank were severely burred up in firing and the edges of the burrs rubbed on the sides of the casing. Remedy, caseharden the cams.

3. Too short recoil occurred in several instances when the gun was fired, the buffer being filled with equal parts of glycerin and water.

4. No instances of shortened recoil were experienced after filling the buffer with pure P.924. The length of recoil was attained in the last instance by "trial and error"; i. e., the buffer was not filled according to instructions thereon, but varied quantities of liquid were added by elevating the gun until the length of recoil measured $7\frac{1}{2}$ inches.

5. The best results in automatic firing were obtained by—

(*a*) Using pure P.924 as a buffer liquid.

(*b*) Crank spring set at 31 pounds.

Conclusions.

It is not possible to ignite hydrogen by a normal gun flash on firing.

It is, however, possible to ignite it if particles of burning propellant or foreign substances are emitted at the muzzle.

Notes on Muzzle Blast Trials.

The only information available with regard to the probability of ignition of hydrogen by the muzzle blast of quick-fire guns is contained in the reports of trials carried out in 1916 with the ordnance quick-fire 2-pounder, Mark IV, and in the reports of recent trials carried out with the ordnance quick-fire 1-pounder automatic, Mark V.

The points of particular interest in these reports which may be taken as a guide as to the advisability or otherwise of mounting such guns on airships, where the muzzle blast is likely to encounter mixtures of hydrogen and air, are as follows:

1. Particulars of the propellant charges used.

2. Point in the shot travel at which the whole of the charge is estimated to be consumed.

3. The temperature of the hottest part of the muzzle blast.

4. The working pressure of the gun.

5. The M. V. of the projectile.

6. The length of time during which a "dangerous temperature" is in contact with the most easily ignited mixture of hydrogen and air.

With regard to 6, this is considered really the most important point, and while it is practically impossible to estimate, it may be generally said that the smaller the caliber of the gun for given tem-

peratures of muzzle blast the shorter is the time of contact with consequent less likelihood of ignition.

Below are given comparable figures of the first five of the above points for the 2-pounder, Mark IV, and the 1-pounder, Mark V. As regards the sixth point the 2-pounder, Mark IV, is 40 mm. caliber and the 1-pounder, Mark V, is 37 mm.

Gun.	Particulars of charge.	Where charge is consumed.	Temperature of muzzle blast.	Chamber pressure.	Muzzle velocity.
		Shot travel.	° *C. abs.*	*Tons per sq. in.*	
2-pounder	560 grs. M. D. 2¼	1/4	1,900	10	1,200
1-pounder	268 grs. M. D. T. 15–13	1/3	1,900	9.2	1,248

(C) Report on 1-Pounder, Mark V.

Trial carried out at Royal Arsenal to determine blast effect with a charge of M. D. 15–13, 3 September, 1920:

Mounting.....Airship pedestal.
Projectile.....1 pounder proof shot.
Charge.....M. D. 15–13.
Q. E.....0°.

Screen.—Airship outer fabric, prepared by Cardington, 6 feet square, laced by eyelets every 5 inches to timber frame.

Fixed firmly in vertical plane parallel to that of trajectory and at a known distance from it. The rear edge was 6 inches aft of the gun muzzle.

A tarpaulin was arranged to catch any unconsumed cordite.

Round.	Temperature.	Distance of plane of screen from trajectory.	Remarks.
	° *C.*	*Ft. in.*	
1	−15	6 ..	No flash visible; no unconsumed cordite found; fabric swung about 1 inch in center, but quite undamaged.
2	−15	5 ..	Do.
3	−15	4 ..	Do.
4	−12	3 ..	No flash visible; no unconsumed cordite found; fabric swung about 1 inch in center, but quite undamaged; very small pieces of loose dope blown off.
5	−12	2 6	No further effect.
6	−12	2 ..	Do.
7	−12	1 6	Very slight stretch perceptible near muzzle of gun.
8	−12	1 ..	From 18 inches to end of screen slightly rippled; effect deflected upward by ground; effect not permanent.
9	−11	.. 6	Area near muzzle stretched slightly permanently; surface of dope covered with very minute cracks; damage from 2 inches to about 23 inches with a maximum diameter of 26 inches.
10	−11	.. 2¼	Similar area to above; damage from 1½ inches behind muzzle to about 28 inches; maximum diameter of 29 inches.

The seam down the center of the fabric showed no signs of giving way, the edges remaining stuck down by the dope.

No flash or sparks were visible and no unconsumed cordite was recovered.

Firing Trials of 1-Pounder, Mark V, Vickers Gun.

Firing trials were carried out at the butts with the 1-pounder, Mark V, Vickers gun on the 7th instant in accordance with Air Ministry letter A.P.T./56646, dated the 5th instant.

The weight on the crank was adjusted to 35 pounds, and the buffer cylinder filled with a quantity of pure P.924 oil, sufficient to give a normal length of recoil; i. e., 7½ inches.

Two rounds of practice ammunition were fired to adjust length of recoil and four rounds to test the new crank with hardened cams, etc.

The hammering of the cams (crank) on the bosses of the bolt securing the rear end of the gun casing still causes serious burring of the cams (crank).

The rear end of the crank roller path is also seriously indented by the hammer impulse of the rollers (crank) at the end of the recoiling stroke.

The gun functioned correctly in all respects.

Recommendations.

It is suggested that a buffer stop be fitted to the underside of the rear bolt, securing the gun casing in the way of the cams (crank) during extreme recoil.

GERMAN FIRE-CONTROL INSTALLATION.

(13826–A.)

Source: Reliable. **4 February, 1921.**

The firm of Siemanns-Halske have direct charge of the fire-control installations in the German Navy. A large amount of this work has been carried on at this concern under the direction of Capt. Gluer, of the German Navy, formerly gunnery officer of the *Gniesnau*. Some of the developments carried on by this concern were due to this officer, who three times won the prize for gunnery prior to the war.

The directorscope for controlling the guns in train was manufactured by the firm of Carl Zeiss and to some extent by Goerz, as far as the optical parts were concerned. The electrical installation attached thereto was manufactured entirely by the firm of Siemanns-Halske. The *Baden* was fitted with three main fire-control stations, which could be operated in the following manner: One directorscope for the control of the entire battery or one for the main battery and the other two for the secondary battery. In case any one station was damaged, or in case visibility was poor, the arrangements were so made that any one of the other stations could take over the control. The entire system was so arranged that all guns, searchlights, and range

finders followed that directorscope in train which was controlling the batteries. The entire electrical system is a 50-cycle alternating current system, which has been developed to its present state of perfection by exhaustive research and experimental work, lasting for a period of over 20 years. The directorscopes are so fitted that the parallax is automatically compensated for in the directorscope itself. At the guns there were two so-called "receivers," having electrical connection with the directorscope and mechanical connection with the guns or turrets.

One dial indicated the degrees with 30-minute graduations, while the other dial gave the fine adjustment with an accuracy of plus-minus 1 minute of arc. It has been stated that errors of 2 minutes of arc in either the electrical or mechanical part of the system were sufficient to cause rejection of the apparatus.

In regard to the employment of the directorscope in elevation, the system is arranged for both direct fire and indirect fire. This system has been developed to a high state of perfection; has the advantage of extreme simplicity, and, furthermore, is not in any way disturbed in its operation by damage to the individual instruments. In this respect this system has advantages which have not yet been equaled by the General Electric Co. in their new developments, nor has it been approached for accuracy, simplicity of construction, ruggedness, and extreme flexibility by any of the older systems now in use. For obtaining the rate of changing the range a special apparatus is employed which depends for its accuracy on the accuracy of the range-finding readings. This instrument electrically averages the ranges which are electrically transmitted to it from all the range finders of the ship which are working on the target. If any one or two range finders indicates a range a thousand yards out, it is automatically rejected from the average. By means of a special device fitted somewhat in the form of a range clock, the rate of change is read off directly. This rate is then set on the directorscope direct, or it may be set on the directorscope held in reserve in the central station. This system also employs 50-cycle alternating current.

In order to pick up the targets quickly, the directorscopes are assisted by finding telescopes which are mounted in relatively unprotected places, namely, on the mast and on the navigating bridge. These are connected electrically to the directorscopes and permit the latter to be swung quickly on to the target as soon as same is picked up. For picking up torpedo boats the directorscopes for the secondary battery are so mounted that they may be quickly swung on the target, thus bringing the gun and searchlights to bear in the shortest possible space of time.

Owing to the extreme bitterness caused throughout Germany by the reparations note which has just been received, this firm has stated

in definite terms that they will not sell to the French or the English. There is no question whatever but that the excellent firing shown by the German Navy in the last war was due entirely to the excellency of the fire-control system. In this system special provisions have also been made for compensating for errors due to erosion. The greatest part of the accuracy in spotting and in determining the rate of change of range is due to the stereoscopic range finders.

AERIAL BOMBS—GOERZ C.

(13983.)

Source: Reliable. **24 December, 1920.**

During the early part of the war the Carbonit bomb, manufactured by the Carbonit C., was used by the German Army Air Service. The Goerz C. was requested by the German Government to design and construct bomb sights for use with these bombs, but early found that no effective sight could be produced as long as bombs of such crude design and giving such varied trajectories were used. The Goerz C. was thereupon instructed to design a bomb which would give reliable performance results.

In 1915 the Goerz C. undertook the design and development of the 12-kilo bomb intended for use against unsheltered personnel. This type of bomb proved very successful, and approximately 600,000 were manufactured for the German Army, according to this design, by Goerz and other companies. This work became so extensive that the Goerz C. had to establish a separate factory and proving ground for bomb work. Early in 1917, the Goerz C. developed the 50-kilo bomb for use against light material, of which approximately 50,000 were built by them and 80,000 by other companies for the German Army. Later in 1917, development of the 100-kilo bomb was completed and about 25,000 were built by Goerz for the Army. By the end of 1917, development of the 300-kilo bomb was completed, and approximately 20,000 of these bombs were delivered to the German Army during the early part of 1918. The development of the 1,000-kilo bomb was then undertaken and experimental work completed shortly before the armistice. A few bombs were constructed, but none had been used at the front up to that time.

The bomb work of the Goerz C. was simply a side line of their war activities undertaken at the request of the Government, but it was so thoroughly done that eventually all the successful German aerial bombs were built on the designs of this company. The Goerz C. is now preparing a summary of their activities along this line, based on their records and have also a very complete series of photographs of their experimental work. This experimental work was carried out very thoroughly. The Goerz C. used bomb explosives supplied by other companies in accordance with the orders of the German

Government, but their records and photographs show clearly the advantages and disadvantages of these explosives of various compositions.

The following facts, while not new in many cases, may prove of interest:

All bomb fuses developed by the Goerz C. had their safety feature based on principle of three or more pivoted pieces that were thrown outward by centrifugal force due to bombs' rotation during fall.

Approximate rotation speed of from 250 to 300 turns a minute was necessary to arm the fuse. In addition to this safety feature, the fuse was also locked by a pin that could be taken out after the bomb was installed in the aircraft. The 12-kilo bombs could be dropped from 200 meters, and would be armed before reaching ground. Later, a development of their type of fuse permitted arming during fall of 100 meters. For bombs of 100-kilo and above that weight, two fuses were used at opposite ends of powder chamber. This was done not only to assist in certainty of the explosion, but also to give a more complete ignition of bursting charge. All large fuses had a two-pointed plunger, which came in contact with two separate percussion caps with separate holes for each cap for ignition of bursting charge. Large fuses were also built with a delay action that could be timed at will.

The shape of all sizes of bombs was made practically the same except for tail surfaces or vanes. This shape was designed so that the bomb developed a speed of 270 meters per second on a 2,000-meter fall and 300 meters per second on a 4,000-meter fall. This was considered as a practical limiting speed.

The 100-kilo bombs and others above that weight had four tail vanes; those below that weight had three. All tail vanes were curved in the plane perpendicular to fore-and-aft line of bomb, with corresponding increasing pitch.

In 100 and 300 kilo bombs, the proportion of weight of bursting charge was 60 per cent of total weight of the respective bombs.

Incendiary bombs of large size were considered unsuccessful. The employment of many small bombs of incendiary type was considered more effective. Even for explosive destruction work, the use of three 300-kilo bombs was believed to be more effective than one 1,000-kilo bomb.

SUMMARY OF GUNNERY TRAINING IN THE JAPANESE NAVY, GENERAL CHARACTERISTICS.

(14155.)

Source: Reliable. **3 February, 1921.**

1. Gunnery training is broadly divided into (*a*) individual training, and (*b*) training as a unit.

2. Every year the Minister of the Navy gives out the general scheme with regard to the above two kinds of training, which is put into practice, the commanding officer of each vessel and the flag office of each squadron determining respectively detailed rules for individual training and training as a unit.

3. In individual training those who produce excellent results throughout the year are given prizes (money or articles), such number being as a rule about one-fourth of the guns' crews of the ship. Besides, petty officers and men who hold important duties (such as pointer, trainer, etc.) and who show excellent results throughout the whole year receive a certain amount of increased pay for the next year, and those who show excellent results year after year are given a badge which they wear during their whole life.

4. Training as a unit is principally what is called "battle firing," and is carried out by ships either singly or in formation, according to their kinds, duties, etc. The results are recorded and submitted to the Minister of the Navy, who refers them to the education department, where they are examined. The squadron which shows excellent results receives a certificate and champion flag, also prizes given by the Emperor.

5. With regard to manners of carrying out "battle firing," they are almost the same as those stated in "the gunnery training of the United States Navy" received from the naval attaché to the American embassy. In a word, the main point is to carry them out at open sea under circumstances as near as possible to actual fighting.

6. Besides battle firing, firing at short range and other practices are carried out. The numbers of such practices, the range, etc., are entirely left to the commanding officer of each ship and squadron to decide. The Minister of the Navy only designates at the beginning of each educational year the number of shots to be expended during the year for each vessel, according to its kind and duty.

7. With regard to results of various firing practices and gunnery training, when it is considered necessary statistic material for reference are distributed, but they are not periodically printed. To squadrons officers are dispatched who inspect various practices of gunnery, give lectures on the subject, etc. With the training given at the gunnery school, efforts are being made to maintain the greatest efficiency in gunnery as far as the present conditions permit.

8. Regulations, results, opinions, etc., with regard to gunnery training and its enforcement are kept strictly confidential and have never been published outside of the service.

EX-GERMAN BATTLESHIP "BADEN"—FIRING TRIALS—EXPERIMENTAL GUNNERY TESTS.

(14242.)

Source: Reliable. **7 March, 1921.**

The ship was anchored bow and stern in water about 50 feet in depth. The firing ship was about 400 yards distant. Seventeen shots were fired, using H. E. and A. P. shells (15-inch).

The ship was examined after each shell was fired. Some of the shells were fired against the barbette and some of the shells were fired against the side.

Referring to the firing against the ship's side, it is of interest to note that the ship was inclined so as to simulate high-angle firing. This inclination was so great that it was not practicable to obtain impact on the main side armor belt. There is some confusion of ideas relative to the results obtained from this firing, but some of the opinions expressed are to the effect that the minute subdivision of the ship, so far as the compartments behind the upper strake of armor are concerned, is a disadvantage rather than an advantage. Apparently, considerable havoc was wrought in these compartments. which was accentuated by the presence of interior bulkheads.

Sections of the side armor main belt have been removed and firing tests will be conducted at the proving ground. The results of the experiments on the ship at anchor indicate that there is little, if any, superiority of German armor over British armor; in fact, some of the opinions obtained indicate that the German armor is slightly inferior to the British armor. This is, of course, a matter of opinion, as the data obtained is not sufficiently definite as yet to determine accurately the relative merits.

The last shot at the *Baden* was fired late in the afternoon and the impact was close to the water line. It was not intended to sink the ship, but as the ship was heeled heavily, the small amount of water that came in was sufficient to heel her further and water soon commenced to come in the gun ports and the ship sank during the night. This premature sinking prevented carrying out certain air-bombing tests which were contemplated the following day, so that to date no tests involving the use of aircraft have been carried out on this vessel.

Generally speaking, the results of the firing conducted to date are rather inconclusive.

ORDNANCE NOTES.

Source: Reliable. **8 February, 1921.**

(*a*) Delayed action fuses.

(*b*) Use of ex-German battleship *Baden* as a target.

(*c*) Stereoscopic range finders.

Referring to recent dispatches in connection with delayed-action fuses, it can be stated with more or less definite authority that such fuses are not being manufactured by any English firms for Japan.

It is reported that the British have not developed a satisfactory delayed-action fuse since the war and that the present British fuse is not efficient for an oblique impact. The British Admiralty has the Krupp fuse, obtained during the war from numerous German shells which failed to explode. It is said that the Krupp fuse is an excellent one, but that the Admiralty is not so optimistic over it. The Krupp fuse is probably based on the principle of interlocking gears and a baffled powder train. The interlocking gears are released in succession and permit safe clearance of the muzzle. The powder train is required to pass very sharp angles in order to give the proper amount of delay. The amount of baffling determines the amount of delay in the powder train.

A few notes on the recent firings at the ex-German battleship *Baden* have been obtained. The *Baden* was anchored off Spithead and fired at by a British monitor with 15-inch guns. The effect of the fire was to sink the *Baden*, but the sinking occurred in shallow water. The firing occurred at an actual range of 500 yards with a theoretical effect of range of 15,000 to 16,000 yards. The firing was to test shellite, an armor-piercing projectile, and also to test fuses.

The firing was in no way, it is thought, a test of the armor of the *Baden*. A great part of the armor of the *Baden* has been removed and will undoubtedly be tested at the proving ground. Bulls-eyes of the diameter of about 9 inches were pasted at different points on the *Baden* as desirable points of aim. It is said that about 98 per cent of the shots hit the bull's-eyes. Twelve shots were fired altogether at the *Baden*. One of these shots pierced the boiler room and the smoke was seen to come out of the stacks.

It is said that stereoscopic range finders are particularly efficient for twilight observations or on objects which are almost entirely obscured, due to one reason or another, and on which ranges can not be taken with the coincident type, and also that stereoscopic range finders are particularly efficient on fast-moving objects, such as airplanes. It is further stated that ranges of smoke screens can be obtained by the stereoscopic range finder and that this is considered an advantage.

The British consider shellite satisfactory, as it does not break the shell into such small bits. Large pieces of shell effect material and structural damage, which is more to be desired than damage to personnel.

Our armor has an extremely hard face. Krupp armor, it is said, has not such a hardened face, and the British in this respect strike a mean between the two. A further interesting fact is that at a recent conference in the Armiralty between civilian experts and Admiralty officials it was decided that in the future manufacture of armor the tendency will be more in the direction of the American armor than at present, due to the difficulty of a shell biting on an extreme hard face on oblique impact. In other words, our armor is considered more the ideal for extreme ranges and large angles of impact.

ACTIVITIES AND EQUIPMENT OF THE FIRM OF CARL ZEISS, JENA, GERMANY.

(14160.)

Source: Reliable. **3 February, 1921.**

The factory of the firm of Carl Zeiss, at Jena, was largely increased during the war, and two new buildings of six stories each have been erected. The vast majority of work for the Government was for the German Navy. The firm had employed over 6.000 workmen in that part of the factory devoted to naval equipment alone.

The following instruments were manufactured for the navy exclusively:

Stereoscopic range finders.—8.2-meter base and 7.8-meter base for the turrets of battleships and battle cruisers, respectively.

Three-meter base range finders (stereo), fitted with tripods.

Antiaircraft range finder, 3-meter base.

Directorscopes for battleships and battle cruisers.

Tropedo directors for battleships.

Range estimators for submarines.

Telescopes for flag officers.

Telescopic sights for all caliber guns of variable power.

Bore sights and adjustments for bore sighting at sea.

Binoculars (naval type).

Portable range finders.

Cameras.

Apparatus for drawing range finders, telescopes, and periscopes.

Periscopes for submarines.

The stereoscopic range finder was used entirely in the German Navy. The German Navy in the year 1915 fitted one vessel with coincidence range finders and made exhaustive tests to determine relative advantages of the two types.

It is the general opinion that the stereoscopic type is superior. The main drawback of the coincidence type is the tiring of the eye, resulting in poor measurements, the vibration effects which disturb the accuracy of the coincidence type, and the inability to keep the whole target in the field of vision. *For purposes of spotting this range finder was particularly desired, since it permitted the observer to closely estimate and measure the distance of the splashes away from the target.*

The Austrian Navy was equipped entirely with Barr & Stroud range finders at the beginning of the war, but after tests with the Zeiss stereoscopic range finder the former were entirely replaced by Zeiss range finders in the first year.

At the present time there are employed in the Zeiss factory for naval purposes about 100 men, who are principally engaged in making a few instruments for the Brazilian Navy to complete an order placed some time ago. This has been allowed by the control commission.

There are also a few orders for instruments from Dutch concerns, but the firm has been informed during the last week by the naval control commission that these instruments must be destroyed. It is said that this firm is planning to enter into some combination with the firm of Bosch-Lomb in the United States, provided an agreement could be reached.

BRITISH INVENTION TO REDUCE EYESTRAIN BY MR. R. J. E. HANSON.

(3465.)

Source: Reliable. **3 February, 1921.**

It appears that Mr. Hanson was employed during the war as an expert in opthalmic work and became very interested in the prevention of eyestrain of the enlisted personnel of His Majesty's service.

Mr. Hanson declares that a great deal of eyestrain of "pointers" and "trainers" is caused by an improper position, cramped position causing muscular strain, and this in turn affecting the eye. He also stated that eyestrain is caused by the object observed not being in the plane of the eye. He illustrated this point by the fact that spectators at the cinema, seated in the pit and looking upward at the screen, had a much greater strain on their eyes than those seated higher and who were able to look directly at the screen or downward. To look directly at the object is the natural way and to look upward brings a strain on the neck muscles, and this in turn affects the eye, as shown by the fact that the people in the pit at the cinema suffer from headaches and eyestrain.

Feeling confident of the truth of the above observations, Mr. Hanson was of the opinion that the greatest percentage of eyestrain could be prevented by training personnel to take a proper position

or "stance" and at the same time provide a rest for the head and eyes so that the enlisted man could not look through the telescope unless he had first taken up the proper position. For this purpose he designed rubber buffers with special eyepieces with a clamping device, such that it could be clamped to any existing telescope and easily adjusted to its proper position.

Mr. Hanson also stated that eyestrain was caused by observing with one eye and keeping the other closed. By keeping one eye closed a muscular effort was necessary, and if sighting through a telescope for a protracted interval, such muscular effort would necessarily cause a strain on the eye. To obviate this, he invented a device incorporated in the rubber buffer previously mentioned such that the enlisted man looking through the telescope actually observes through one eyepiece with one eye and with the other eye observes through a similar eyepiece with the exception that this latter is blanked off by a patent composition, such that the eye looks directly into it, and no strain is the result.

Mr. Hanson also became interested in the prevention of eyestrain of officers in the submarine service which was caused by the necessity of observing through the periscope for lengthy intervals. Starting with the same hypothesis, that is, incorrect position causes eyestrain, he developed a chair made of canvas and so fitted in front of the periscope that the officer observing through the periscope and seated in the chair would have his eye exactly aligned with the axis of the eyepiece. This chair is adjustable so that it can be used by different persons.

JAPANESE ACTIVITIES IN GERMANY (OPTICAL).

(7510–B.)

Source: Reliable. **1 February, 1921.**

The owner of the optical concern Nippon Kogaku Kabushiki Kaisha in Tokyo, has arranged for nine optical experts from Germany, largely ex-employees of Goerz, to come to Japan to assist in building up the optical industry there for war material. These experts are experienced in the design of periscopes and range finders. As these Germans are taking their families with them to Japan, it is presumed that they intend to stay for some time. It is reported that this concern mentioned above is in close connection with a large firm of Mitsi Bishi, which is owned by Baron Iwasaki. It is reported from Japan, from the same source, further, that the optical concern of R. Konishi, which has been making cameras, is afraid of this competition, and will consider going in combination with the firm of Nippon Kogaku Kabushiki Kaisha.

It is reported that two other engineers from the firm of Carl Zeiss are also on their way to Japan, presumably to enter the same combination. It is reported further that a Japanese made a trip to Germany shortly after the armistice, and was smuggled into the firm of Carl Zeiss, in Jena, disguised as a Spaniard. It is stated from the same source that this man succeeded in getting very good information concerning the design and construction of all of the Zeiss instruments. Whether or not he succeeded in getting any drawings is not known.

From the information received from different sources in Germany, it is certain that the Japanese will now be in a position to manufacture all of their optical instruments in their own country and that their source of supplies will not in any way be cut off in case of war, as they have already purchased sufficient quantities of optical glass to last them for a period of about four years.

ORDNANCE, GREAT BRITAIN.

(12763.)

Source: Reliable. **8 March, 1921.**

The following extract taken from the March issue of The Navy (organ of the Navy League) is quoted for the information of the department:

"Important developments in naval gunnery have been made in the last two years, but one direction to which the authorities attach especial importance is the efficiency of observation and spotting from the air. A number of junior lieutenants have recently been invited to undergo a course of training as observers with the Royal Air Force, who, after qualifying, will be appointed to naval aircraft carriers for service as observers. So important is this aspect of gunnery work that the first batch of observers will receive training in nothing but gunnery spotting from the air, and at least four months will be devoted to the instruction."

"MUTSU," THICKNESS OF PROTECTIVE DECK.

(6797.)

Source: Reliable.

On page 152 of Bulletin No. 1–1921 there appeared the following statement:

The protective deck of the *Mutsu* is reported as of 350-pound plate, approximately 3 inches thick. This statement is an error and should read the protective deck of the *Mutsu* is approximately 3 inches thick on the slope and 1½ inches thick on the flat.

JAPANESE TORPEDOES.

(5335.)

Source: Reliable. **18 February, 1921**

It is stated that the Japanese Navy is now experimenting with a 24-inch torpedo, and if the results are successful this type of torpedo will be used in the above-water tubes of dreadnaughts and battle cruisers.

ORDNANCE NOTES.

(7010.)

Source: Reliable. **27 January, 1921.**

The Vickers contract with Japan for battleship armor amounts to 8,000 tons. This armor is not complete, but comprises only the more difficult parts.

SUBMARINES.

THE ARMORED SUBMARINE.

(14234.)

Source: Reliable. **11 February, 1921.**

The report recently appearing in the newspapers regarding a new invention in the territory of submarine construction again turns public attention to this branch of shipbuilding, a subject at one time in everyone's mouth, but driven from their thoughts by the trend of political events.

Now that the barriers which prevented a discussion of this question in the newspapers during the war are down, the greatest possible publicity may be given to what was accomplished through quiet, enthusiastic labor during the war. As regards the new invention, it is well to-day to examine in how far the problem of stability has been an influencing factor in the development of the submarine.

When the Krupp Germania Werft, in Kiel, built the first large seagoing submarines in 1904, they were enabled to undertake this great technical risk because the firm of Körting Bros. had brought out operating petroleum motors with a capacity of 200 horsepower. In proportion to the size of the motors, the size of the boats, their torpedo armament, and other appliances were established. In this way, the *U–1*, the first boat for the German Navy, was constructed. In these first boats, the question of stability was far from satisfactory. The further development of larger boats with a greater capacity was dependent on these types of motors made by Körting, since nothing better was on hand at the moment. As many as four engines were built in one boat. The subsequently celebrated *U–9* belonged to this class.

Later the Augsburg-Nurenberg Machine Works developed a type of Diesel ship motor having a capacity of 850 horsepower, and the navy decided in 1912 to build two machines of this type in a boat, and a new era in the building of submarines began. Because of the lesser consumption of fuel (over a half) of these motors, the ships could travel for greater distances, and there was also a saving in weight which could be used advantageously for the torpedo armament. The Augsburg-Nurenberg Works, because of their ripe experience in the building of Diesel motors, now went forward step by step and produced a 1,000-horsepower type that was employed in the submarines being prepared at the beginning of the war, so that every one of

these boats had a capacity of 2,000 horsepower. In the meantime, the length of the boats was increased to 65 meters, their displacement to 660 tons out of water and 855 tons under water, and their speed from 15.5 to 16 knots.

The solution of the question of stability kept pace with these developments and became less and less difficult as the size of the boats increased. One had to overcome a sort of children's disease in these first submarines. The knowledge of the problem of stability was already so far advanced that ways and means were found whereby the point at which arose the tendency to capsize at the period of submersion and emersion was so arranged through the adoption of a proper form that there was still sufficient support in the plane of flotation.

There were many patents introduced at this time for the improvement in the stability of submersible boats (Doppelhullenbooten). The commander's tower on all these boats had an armored protection of from 30 to 35 meters, partly of nickel steel. Naturally this heavier weight in an elevated position demanded great care; nevertheless it was no hindrance to the building of effective boats in the beginning of the war.

The next development of the boats by fitting them with oil and electric appliances (oil motors above water, electric motors under water) appeared to have reached a standstill in 1912 and 1913, not because the stability was still unsettled; no, but because the motor firms could only reluctantly bring themselves to the building of larger machine units.

The submarine builders therefore looked about for motors capable of development (partly with steam) in order to produce a mechanism of whatever size desired and therefore achieve a large, quicker boat with, at least, the speed of a surface craft.

Apropos of this, a lecture was published in 1921 before the Technical Shipbuilders' Club concerning a steamboat of the Weser-Bremen Co. having a displacement of 1,472 tons out of water and a speed of 27 knots. A design of 3,500 tons was discussed in the same lecture.

The War furnished an excuse for dropping all these more or less risky speculations and placing the submarine on a sure footing and to limit it to practical accomplishments. And because of this (in spite of the cry for larger boats) there was again the slow development because of the size of the motors. It ended finally by a capacity of 300 horsepower per cylinder, 1,800 horsepower in 6 cylinders, and 3,000 in 10 cylinders. The boats in question already had a length of 100 meters and over 2,200 tons displacement. They contained, in accordance with the exigencies of war, one or two 15-mm. rapid guns or also reversible deck torpedo tubes, besides the very complete torpedo armament under water and the increased armored protection. They were constructed as armored submarines.

The question of stability also presented no difficulties here as soon as the heavy accumulation battery (around 150,000 kilograms in boats of this size) was placed very deep in the body of the boat.

The trim ballast (the name already indicated that it is intended to regulate purely the length of the boat and to remove irregularities at the time of construction) already amounted to not yet quite 2 per cent of the surface displacement. Practically one can hardly recommend the abolishment of this ballast, even when it is theoretically not necessary, because of the especially constructed ship form. Have our submarines not proved themselves admirable as seagoing ships? Their deeds speak for themselves.

Another circumstance is that the capsizing point at submersion and emersion decreases as the size and mass of the boats increase.

The war was the first excuse to devote especial attention to the submersible qualities of the boats. A quick submersion was their best protection against the enemy's fire and ramming.

At this point in the development the more extended employment of armored protection stood no longer in the way, even though its employment as a protection against water bombs is doubtful, as the bombs operate more through the increased hydraulic pressure than through mere striking power.

According to the technical point of view, in so far as sufficiently large machinery is in question, it is very possible to build submarines of every size, every armament, and with the desired armored protection, a fact which has occurred many times during the war.

ITALY, HEAVY OIL ENGINE, MANUFACTURE OF.

(5749.)

Source: Reliable. **21 March, 1921.**

The firm of Ansaldo San Giorgio, Via Cuneo 20, Torino, Italy, has the same president as the big Ansaldo firm of Genoa. It is a stockholding firm, many of the stockholders being the same in the two companies. The books of the Ansaldo San Giorgio firm are, however, entirely distinct from the other firm.

The firm of Ansaldo San Giorgio is devoted entirely to building gas engines, heavy oil motors, Diesel motors, motors for airplanes, etc. It is the largest firm manufacturing heavy oil motors in Italy. They employ 3,500 men, but they are now running with a reduced force working only six hours a day. The firm is efficiently organized and has modern up-to-date machinery. A visitor is met at any one of the entrances by a porter in uniform, who inquires your business. A visitor is required to fill out a blank card, stating Mr. ---------- desires to speak with Mr. ----------, of the firm. The labor conditions were said to be improved but not normal.

The firm build only their own designs of motors and specialize in four-cycle motors, submarine, merchant ship, airplane, and land motors.

Some of the work now in the shops consisted of two heavy oil engines, four-cycle, designed for 1,200 horsepower, but it was claimed they would develop 2,000 horsepower each. These engines are being built for a United States merchant vessel for electric drive of the Westinghouse design. There were also under construction four other 1,200-horsepower motors for merchant vessels. This firm built the 12-cylinder motors installed in the dirigible *Roma*, recently purchased by the United States Army. They are also building a new design of 12-cylinder airplane motor for one of the aviation meets this summer.

This firm recently built six 1,500-horsepower submarine engines for the Japanese Navy. The firm is now designing at the request of the, Japanese Government, a 5,000, 10-cylinder submarine engine.

The firm has a branch at Spezia, where submarines are built upon their own designs. Toward the close of the war the firm built for Italy two 430-ton submarines, which Italy did not take and which the firm is now negotiating to sell to Peru. The firm has also built two 430-ton submarines for Spain. The firm claims that Spain has operated these submarines, which are of 350 horsepower, successfully on olive oil. It was claimed the motors operated on olive oil at temperatures of 0° C. up. It was also claimed that semi-Diesel motors could be run at double the designed speed with no ill effects. The firm is doing much experimental work. The firm at Torino do all work of casting, forging, and machine work, except forgings for the larger crank shafts, which forgings are made at their branch in Spezia.

BRITISH SUBMARINE "K–5," LOSS OF.

(6503.)

Source: Reliable. **2 February, 1921.**

Since the unfortunate loss of the *K–5*, considerable comment has been published in the press with regard to the probable and possible causes of the loss of this vessel. A great many possible causes have been advanced, none of which has any foundation in fact. It is understood the Admiralty will make public the findings of the court. In the meantime certain definite information has been obtained, which is as follows:

K–5, in company with four other boats of the *K* class, was out for a cruise. *K–5* dived and 20 minutes later was seen on the surface apparently in absolutely satisfactory condition. Shortly after this *K–5* again dived, and the boat has never been seen since. She went down in 95 fathoms of water, precluding any likelihood of salvage.

In the vicinity of where *K–5* was last seen a small amount of wreckage was discovered, consisting of pieces of teak girder or beams and a ditty box. The pieces of teak were salvaged and carefully examined. These teak beams support the battery covers in the *K* class, and when examined they showed evidence of having been pressed down forcibly upon the battery terminals or bus bars. The probable finding of the court of inquiry will therefore be that *K–5* suffered an internal explosion, the source of which is very apt to have been an exploding air bottle. The theory is that one or more air bottles exploded, opening the strength hull to the sea, which caused the boat to founder, all hands being drowned.

The actual cause of the loss of *K–5* will probably never be known, but the circumstantial evidence available indicates that the theory outlined above is at least plausible if not entirely probable. The fact that the boat made at least one successful dive just prior to her disappearance indicates that something very unusual happened, and the internal explosion theory appears to be logical from the evidence available.

GERMAN DEVELOPMENT OF SUBMARINE SIGNALLING.

(13971.)

Source: Reliable. **17 December, 1920.**

This device consists principally of an oscillator for sending and receiving, which is operated electrically in a manner similar in general to the Fessenden oscillator. The main points of interest to this oscillator are the facts of its light weight (about one-third of the Fessenden oscillator), its specially constructed diaphragm with the fundamental note of about 1,200 vibrations per second, and the construction of the electrical circuits.

For receivers, this company has constructed both electric and acoustical methods. These devices are so constructed that the resonance may be predetermined and located at the points best suited for the character and work for which they are built.

All the work done by this company has been built up on a solid foundation of theory developed from a careful study of experimental and mathematical research. As a result of this work, extending over a period of about five years, a thoroughly practical and complete theory of the transmission of sound under water has been deduced. The research and experimental work on the deflection of sound waves, due to temperature differences in the water and to variations in density, is of the greatest importance to a navy and merchant marine.

The German Submarine Signal Co. is now attempting to enter into an agreement with the Submarine Signal Co., of Boston, Mass., for the purpose of developing all submarine signalling apparatus for navy and mercantile marine and to manufacture for the sale of such apparatus all over the world.

SUBMARINES, JAPAN.

(6452.)

Source: Reliable. **9 March, 1921.**

At Kobe, Japan, three submarines were built recently. These are of the Italian *Barbarigo* type. The general characteristics of this type are as follows:

Displacement	700 tons.
Horsepower	3,000.

The motors built by Ansaldo, Sangiorgio, Turin, Italy, are six-cylinder, 1,500 horsepower each.

Two of the submarines, it is stated, are completed and have had their trials. The third submarine is not yet completed.

Submarine *No. 29* was launched 10 February, 1921, at the Mitsuibishi Dockyard, Kobe.

No announcement has been seen of the launching of submarine *No. 28*, but it is believed to have been launched about 10 December, 1920.

SUBMARINES NOS. 6 AND 7 STRICKEN FROM NAVY LIST.

(6452.)

Source: Reliable. **8 January, 1921.**

The Japanese submarines *Nos. 6* and *7* have been stricken from the navy list.

Submarine *No. 6* will be kept assembled at the Yasukuni Jinsha Museum, Tokyo, as a souvenir of the early history of submarines in Japan.

Submarine *No. 7* will be broken up at Kure naval station.

ENGINEERING.

THE EXPORTATION OF DIESEL MOTORS.

(14166.)

Source: Reliable. **8 February, 1921.**

The quickly operating Diesel motor, a German invention, was employed in the German industries before the war. During the war its manufacture was confined almost entirely to the requirements of the navy. The experience gained thereby has done much for the development of the machine, but it has not led to the production of a machine suitable only to the submarine. The so-called submarine motor is nothing more than a normal quickly operating type, as it is used in the same form for stationary purposes and for merchant ships, and as it will always be used in countries ranking high in technical matters. The contention that this motor is impracticable for industrial purposes, on account of its unusual consumption of fuel, is also unfounded.

At the time of the armistice a great number of Diesel motors for submarines were in process of construction for the German Navy. These orders were partly canceled before the close of the armistice and partly immediately afterwards. But when the machines were already practically finished, some were finished for the Government and others for private firms for peaceful purposes.

Furthermore, a number of motors were obtained from the submarines which did not have to be delivered to the Allies, but had to be destroyed.

The German Government took the position that article 189 of the peace treaty held good in the latter case, since these machines might be used for industrial or commercial purposes while their export was forbidden. The motors which were not yet installed in submarines were, according to the opinion of the German Government, free from any restrictions. A number of these have been exported to Japan by the firm of Blohm & Voss, of Stettin, which bought them from the Government.

The interallied marine-control commission took the contrary position; that all motors which had been built in submarines, or were destined for such use, were war material, and therefore, according to article 192 of the peace treaty, must be destroyed. The German Government protested to the conference of ambassadors against this demand, which would mean the destruction of economic material up to the value of several milliards. In its response of

10 November, the clnference sustained the ruling of the control commission, but stated that it was willing to sanction the use of Diesel motors already on hand for German economic purposes. They stated that this transfer must take place before 31 March, 1921, and held to the destruction of all machines which were not transferred before this date.

The German Government has complied with the request of the conference of ambassadors that it furnish the conference on 31 March with a list of the machines in question with their location and employment, but in other points has held to its opinion and declared that it would probably be impossible in this short period of time to complete the transfer. They also added that this undertaking would be rendered more difficult, since the German buyers must fear that the machines purchased by them could be destroyed after 31 March if these machines were not completely finished and ready for use. The legal position in regard to the export question is, according to the opinion of the German Government, as follows:

(1) Diesel motors that are obtained from wrecked submarines may not be exported.

(2) Motors which were ordered for submarines, but were not yet built in them, can be exported.

(3) Diesel motors which were ordered after the armistice are not subject to any limitations.

The German Government has not any idea of making use of the rights of export of the machines falling in the second category; it prefers to use these machines in German industries, as it has stated in its note to the conference of ambassadors. It has therefore been ordered that the competent bureau of export must refuse export in these cases. Nevertheless, the Government has the right in distinct cases, which are prompted by strong international interests, to permit the exportation of single motors. However, according to an agreement of the intersted ministries, this can only be done with the consent of the foreign office.

THE GAS TURBINE.

(13146.)

Source: Extracts from Lecture by Prof. G. Stauber, of Berlin. 13 January, 1921.

It is unnecessary to recapitulate all the numerous inventions in the sphere of gas-turbine engineering, a far higher percentage of which represent dabblings on the part of the crude laymen as compared with the customary percentages in other fields of engineering, nor do the thermodynamic principles or building materials of the various types of gas turbines require lengthy discussion, as we already possess a suitable gas turbine ready for working, thanks to the untiring efforts of Mr. Holzwarth and the splendid generosity of his

financial backers. Whether this engine will turn out to be marketable or not is not quite sure yet. General conditions to-day seem to be rather favorable for introducing the gas turbine. The economy factor of the whole plant is, of course, decisive in the matter. In comparing the gas turbine with the piston gas engine or the steam turbine, equal conditions must be established for the types of engines under comparison. This is frequently neglected. Thus, for instance, it is necessary to consider the way in which the heat is supplied, i. e., whether it is furnished in the shape of gas with or without utilization of by-products, besides the capability of the engines of being governed, their average load, and the degree to which the generation of gas is adapted to the demand. In calculating the costs of fuel and of plant for comparative purposes, the prices of 1914 and the varying prices of to-day are of no use whatever as a base.

Under present circumstances the heat supply would cost 15 times its price in 1914, while in the case of the plant the 1914 price would have to be multiplied by 25. Assuming the average load to be 72 per cent of the full load, the heat consumption would amount to 5,000 kg. cals. per kw. hr. for the piston gas engine, and 8,500 kg. cals. per kw. hr. for the steam turbine, and 6,500 kg. cals. per kw. hr. for the gas turbine, according to the statements of Mr. Holzwarth. The cost of plant were estimated for a gas turbine and the pertinent spare parts on the base of prices for the heat supply and for the engine calculated as mean average between those of 1914 and those of to-day. As a result the cost of the heat required by the three types of engines for the generation of 1 kw. hr. worked out at 6, 10.2, and 7.8 pf. With an average load of 72 per cent the total expenses per kw. hr. amounted to 22.8, 20.7 and 19.5 pf. These figures, of course, only have importance from a comparative point of view and are subject to variation in proportion with the changing of the ratio of the price of fuel as compared with the price of engines. With the factors of efficiency assumed for the above calculation, the saving in costs of power generation to be expected from the gas turbine are not very considerable; as a matter of fact, this saving would be made good by the piston gas engine as soon as the price of coal approaches the value of coal in international commerce and by the steam turbine on the price of machinery rising. If the gas turbine is to acquire undeniable superiority from an economical point of view, it will be of imperative necessity to be able to build it at a lower price.

JAPAN, ENGINEERING.

(11964.)

Source: Reliable. **3 March, 1921.**

It is said that Japanese naval officers now in the United States purchasing electric propulsion installation for a collier would most probably buy the General Electric installation. Their purpose is to buy an exact model of the latest United States battleship installation regardless of additional cost over a suitable collier installation. The model to be purchased will not be of same size or horsepower as a battleship installation, but in all other respects will be identical with it. The installation purchased is to be used as a sample for designing installations for their own capital ships. It is said that with their present engineering installations that the Japanese will be unable to develop anything like 180,000 horsepower for their new battle cruisers.

In addition to purchasing an installation, these representatives are determined to collect all the information possible on the subject of electric propulsion from every company in America interested in electric drive.

DIESEL ENGINES, JAPAN.

(13479–A.)

Source: Reliable. **9 March, 1921.**

It has been stated that Ansaldo & Co. (San Giorgio Works), at Turin, Italy, recently built and delivered to Japan six Diesel motors for three Japanese submarines. The submarines were constructed at Kobe, Japan, on plans and designs purchased from Italy.

COMMUNICATIONS.

JAPANESE CABLE COMMUNICATIONS.

(11954.)

Source: Reliable. **3 March, 1921.**

Cables to Points Outside of Japan.

To China:

1. Tamsui; northern Formosa to Foochow, China.
2. Nagasaki to Shanghai; two lines of Great Northern Cable Co. (Danish).
3. Nagasaki to Shanghai; one line, owned by Japanese Government.
4. Tsingtao to Chefoo; Japanese Government owned.
5. Dairen to Chefoo; Chinese Telegraph Co. (Chinese).
6. Port Arthur to Chefoo; Japanese Government owned.

To Siberia:

1. Nagasaki to Vladivostok; Great Northern Telegraph Co. (Danish).
2. Nagasaki to Vladivostok; Japanese Government owned.

To Manila:

1. Nagasaki to Manila; Commercial Pacific Submarine Telegraph Co. (American).

To Guam:

1. Bonin Islands to Guam; Commercial Pacific Submarine Telegraph Co. (American).
2. Yap to Guam; Japanese Government owned.

Cables Between Japan and Her Possessions and Between Points in Her Colonies (All Japanese Owned).

1. Nagasaki to Tamsui, Formosa.
2. Anpin, Formosa to Makajo, Pescadores.
3. Kagoshima to Amamioshima, to Okinawa-jima, to Ishigaki-jima, and to Keelung, Formosa.
4. Nagoya, Hizen to Iki, to Ozubara, Tsushima, and to Fusan.
5. Aomori to Kunebetsu, Hokkaido.
6. Sawara to Muroran.
7. Kudo, West Hokkaido to Tsurikake, Island of Okushiri.
8. Tomamae, northwest Hokkado to Teure Island.
9. Wakkanai, north Hokkaido to Oshitomari, Rishiri Island, and to Kafuka, Rebun Island.
10. Nemuro, east Hokkaido to Tomari, Kunashiri Island.

11. Nagasaki to Dairen.
12. Tsingtao to Sasebo.
13. Tokyo to Bonin Islands.
14. Yap to Okinawajima.

Cables Between Points on Main Islands of Japan (All Japanese Government Owned).

1. Yawatano, east Izu Peninsula of Hondo to Oshima Island, and then to Niishima Island.
2. Kumazugawa in Ise to Uchimi in Owari, east coast of Hondo.
3. Kada, Izumi to Yura, Awagi-jima, eastern entrance to Inland Sea.
4. Maiko, near Kobe to Iwaya, Awagi-jima.
5. Muyo, Awa Province, Shikoku to Fukura, Awa-jima.
6. Takamatsu, Sanuki Province, Shikoku to Tonosho, Inland Sea.
7. Misaki, Iyo Province to Saganoseki, Bungo Province, Kyushu.
8. Shimonoseki to Moji.
9. Kagoshima to Akaoghi, Tanehashima, and thence to Miyanoura, Yakushima.
10. Nagasaki to Fukue, Goto Island.
11. Cape Tokobana, southwest Hondo to Nakano-shima and to Saiga in the Oki Islands.
12. Teradomari, northwest Hondo to Akadomari, Sado Island.

Routing of Cables Out of Japan—To Asia.

1. Tokyo, Nagasaki to Fusan and Vladivostok.
2. Nagasaki to Fusan, Chefoo, and Peking.
3. Sasebo to Dairen and Chefoo.
4. Nagasaki: (*a*) To Shanghai, Hongkong, Saigon, and Singapore; via Bombay and Colombo for Europe; (*b*) to Manila, Shanghai, and Hongkong.

(Note.—In 1870, Great Northern Telegraph Co. (Danish) landed cable between Nagasaki and Shanghai. Japanese Government now tends toward Government ownership of all cables.)

To North America:

1. Tokyo, via Bonin Islands, Guam, Midway Islands to Hawaii and San Francisco.
2. Tokyo, Nagasaki to Manila and Guam, where it connects with the above lines.

To Australia:

1. Tokyo, Nagasaki to Shanghai, Hongkong, Singapore, Sourebaya, Adelaide, Melbourne, and Sydney, connecting at Sydney, via Nelson, for Seattle.
2. Tokyo, Nagasaki to Manila and Hongkong, where it ocnnects with the above line.

To Europe:

1. Tokyo, Nagasaki, to Shanghai, Hongkong, Singapore, Cocos Island, Mauritius.

Cable Ships.

The department of communications has one small cable repair ship, the *Okinawa Maru*, for use on Government-owned cable lines.

Rates and Length of Time Required for Delivery.

The average number of days required at present to send ordinary cable messages and rates:

	Rates per word for ordinary messages.
(*a*) *To South America* (10 days):	
Callao	$1.60
Rio de Janeiro	1.83
Panama	1.50
(*b*) *To North America* (via Bonin or Manila) (4 days):	
Hawaii	.83
San Francisco	.96
Vancouver	1.04
New York	1.08
(*c*) *To Europe* (7 days):	
Marseille, Paris, London, Antwerp, Vienna, and Rome	.80
Berlin	.90
(*d*) *To Africa* (7 days):	
Cape Town	1.22
(*e*) *To India* (2 days):	
Bombay	.70
(*f*) *To Australia and New Zealand* (2 days):	
Melbourne and Sydney	.84
Wellington	.93

(*g*) To—	Average number of days in transit.	Rate per word for ordinary.
Manila	2	$0.47
Hongkong	2	.31
Peking	2	.25
Vladivostok	2	[1] .11 [2] .21
Shanghai	1½	.15
Singapore	4	.57
Sourabaya	4	.76
Port Said	7	1.16

[1] Japanese Government owned.

[2] Great Northern Line.

United States Government telegrams may be sent via Bonin Islands or Manila, by cable or wireless, at half rates. No reduction is allowed via Shanghai or Vladivostok.

Manufacturers of Telegraph and Telephone Equipment in Vicinity of Tokyo.

Nippon Denki Kabushiki Kaisha, 2 Shikoku-machi, Mita, Shiba-ku, Tokyo (largely American).

Oki Denki Kabushiki Kaisha, 2 Tamachi, 4 Chome, Shiba-ku, Tokyo (Japanese).

Amaka Denki Seisaku Sho, 1866 Shimo, Shibuyo-machi, Tokyo (Japanese).

Shimadzu Seisaku Sho, 18 Nishiki-cho, 1 Chome, Kanda, Tokyo (branch), Niyo Kudam, Kawara-machi, Kyoto (head office), Japanese.

Mr. Senzo Yae, 2 Nishiki-cho, 1 Chome, Kanda, Tokyo (Japanese).

Importers of Equipment.

Sale & Frazar (Ltd.), 1 Yaesn-cho, 1 Chome, Kojimachi, Tokyo (American).

Bagmall and Hilles, 42 Yamashita-cho, Yokohama (American).

L. J. Healing Co. (Ltd.), 24 Uneme-cho, Kyobashi, Tokyo (British).

Manufacturers of Dynamos for Wireless Telegraphs.

Meridan-sha; Osaka-machi; Ihara-gori; Tokyo-fu (Japanese); Koana Seisaku Sho; 98 Asakusa-machi; Asakusa; Tokyo (Japanese); Mitsubishi Shoji Kaisha; 1 Yaesn-cho, 1 Chome; Kojimachi ku; Tokyo (Japanese), Shibaura Seisaku Sho; 1 Konasugi-machi; Shinbama, Shiba-ku; Tokyo (Japanese).

Of recent years the Japanese Government pursues a policy of not allowing any foreign cable, wireless, or telephone companies to gain any foothold in this country or her possessions.

In 1870 the Great Northern Telegraph Co. (Danish) obtained concession to land two lines connecting Nagasaki with Shanghai and one line from Nagasaki to Vladivostok, and later the Commercial Pacific Cable Co. (American) obtained rights into Nagasaki from Manila and into the Bonin Islands from Guam. These are the only foreign companies owning lines into Japan, and no new concessions are being granted.

The communications are all under the control of the Government through the department of communications. There are no private Japanese cable, telegraph, or telephone companies, communication being all controlled by the Government as a part of her defense system. Private foreign engineers have offered to improve her telephone systems as a private enterprise, but permission to install telephone systems has been refused.

Telephone and Telegraph.

Almost every village in the Empire is connected with telephone or telegraph. Both systems are very defective. The connections are slow, the instruments are very poor, and the operators are poorly paid and inefficient. In the telegraph offices there are so many employees that they retard each other's work.

The Government places her telephones in districts with defense as the primary idea, and not business efficiency.

It is very difficult to obtain a private telephone in any of the big cities of Japan. The situation in Yokohama is typical of that in the other cities. For the year 1921, 4,000 telephones have been applied

for and only 1,000 can be installed; these are allotted by lottery to the applicants. The installation charge alone is 350 yen.

The Government is planning extensive improvements and additions to their telephone system in the near future, amounting to 40,000,000 yen.

In Tokyo not 1 telephone is allotted out of 10 applications. In 1920 the average cost for installing a telephone was 3,500 yen (outside the regular monthly charges). The average cost now is 2,000 yen.

JAPAN, NAVAL COMMUNICATIONS.

(4934-A.)

Source: Reliable. **18 February, 1921.**

The Japanese Government has concluded its experiments with a small radio telephone set. Quantity production is to be begun at once with a view of installing these phones in fishing vessels of about 30 tons and upward. The set has a sending radius of about 60 miles and is to be operated by a small gasoline motor.

The reasons given for installing these sets are, first, to inform the vessels what port to bring their catch to in order to take advantage of the highest market price, and, second, the telephone is used instead of radio because of impracticability of training sufficient radio operators.

The amount of encouragement and help (both financial and otherwise) given this project by the navy department is unknown, but it may be definitely assumed that the navy is neither blind to the advantages to be gained thereby nor has its share in the scheme been a little one.

JAPANESE NAVAL COMMUNICATIONS.

(12526.)

Source: Reliable. **18 February, 1921.**

A new wireless station, estimated to cost 6,000,000 yen, will be established at Otaru, presumably for the use of the army.

The Ocean Meteorological Observatory, recently established at Kobe, will have a wireless attached to it. Shipping firms in Japan have contributed 400,000 yen to aid in this project.

Plans for a new wireless, to cost 200,000 yen, have been submitted to the Diet. The new station will be located in the Kwansei district.

The most powerful wireless station in the Orient is under construction by the navy at Oshima, Sonoki-gun, Nagasaki Prefecture, Kyushu, at an estimated cost of 6,000,000 yen. All equipment is Japanese. It will be finished by the end of 1921.

Upon the completion of the new wireless station at Oshima the Yumihari naval wireless station will be abolished.

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OFFICE OF NAVAL INTELLIGENCE.
NAVY DEPARTMENT.
Washington, D. C.

MONTHLY INFORMATION BULLETIN.

NUMBER 5—1921.

15 MAY, 1921.

DISTRIBUTION;

In general: Bureaus of the Navy Department; all force commanders; all commanding officers of capital ships, the larger patrols, destroyers, submarines, and Navy transports.

GENERAL ARRANGEMENT.

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MONTHLY INFORMATION BULLETIN.

NUMBER 5—1921—15 MAY, 1921.

FOR CONVENIENCE IN ROUTING.

Officer.	Initials.	Date received.	Date forwarded.
Captain			
Executive Officer			
First Lieutenant			
Navigating Officer			
Gunnery Officer			
Communication Officer			
Engineer Officer			
Medical Officer			
Supply Officer			
First Division Officer			
Second Division Officer			
Third Division Officer			
Fourth Division Officer			
Fifth Division Officer			
Marine Officer			

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CIVIL AVIATION IN GREAT BRITAIN.

Source: Reliable; Address by Controller General of Civil Aviation in Great Britain.

(14311.)

21 March, 1921.

It is with very great pleasure that I have accepted your invitation to come here and address you to-night. I have come, it must be confessed, at a time when British civil aviation is faced with very serious difficulties. Last summer we seemed justified in our belief that commercial aviation had taken a definite place, even though on a very small scale, among the great transport services; our pioneer air services to the Continent, though not the most numerous, were the most reliable and the most efficient in the world. To-day there is not a British air service in existence, though France is extending her air services and Germany has made a start, notwithstanding the restrictions imposed by the peace treaty. There are several reasons for this: There are the problems inseparable from the adaptation of a comparatively new discovery to a practical purpose; there is the unfavorable geographical position of these islands; but, above all, there is a general financial stringency and the difficulty of obtaining capital. Yet without capital it is impossible to initiate or run a new commercial concern, and without the experience only obtainable from the practical operation of air services British commercial aviation will disappear; there will be no means of solving the problems connected with it; and other countries will obtain a lead which it may prove impossible to reduce.

There is a school of economic thought which believes that a commercial enterprise which can not pay its own way is ipso facto proved valueless. My only argument against that is, given a reasonable opportunity, it *will* pay its own way, but the opportunity must be given. We are only at the beginning of our knowledge, but if we have the inventive such as is afforded by services in operation within a very few years we will have more efficient ground organization, more reliable and economic machines—in other words, a paying concern. When that time comes there will be no hesitation in providing private capital. The problem with which we are now faced is that of tiding over the immediate period of experiment, and if this can not be done by private enterprise then it must be done with State assistance. For if commercial aviation dies, we not only lose a great potential reserve for our service aviation in time of emergency and thus risk our national security, but we neglect the use of the fastest means of

intercommunication yet devised and surrender commercial air supremacy to those nations which are already fully aware of its importance.

In the course of this paper I shall deal with civil aviation from the point of view, first, of its value to service aviation, then from that of its commercial value. I shall endeavor to enumerate the difficulties which confront us and the remedies which have been suggested.

The Value of Civil Aviation to National Security.

During the war aviation daily became a more potent factor in the situation. At the armistice the most remarkable lines on which development had been achieved and was actually progressing were in the direction of ground fighting, torpedo attack, and night bombing, exemplifying, respectively, military cooperation, naval cooperation, and the strategic use of aircraft. Service aviation, for all it has done, is still in its infancy; and it must be remembered that every war has started with a great advance of scientific skill, accumulated during peace, over that obtaining at the end of the previous war. We may, therefore, take it for granted that by the outbreak of the next war on a large scale, which we hope may not occur for many generations, the knowledge of service aeronautics will have increased to such an extent compared with the end of 1918 that they may not be a contributory but a decisive factor in securing victory. The development of aircraft for direct military cooperation may not witness such radical changes as in the other two directions and will probably consist of improvements along the lines indicated during the war. It will tend to be limited by the requirements of the ground forces.

The potentialities of aircraft in conjunction with naval operations are probably far greater, but more difficult clearly to foresee, since there was no major naval engagement after Jutland, and it was not until some time after Jutland that our torpedo-carrying aircraft were ready for use. There is every indication that torpedo attack by aircraft may reach a point where the very existence of opposing fleets, consisting of the giant capital ship of the present day, may be jeopardized. In fact, partly as a consequence of this possibility, the whole question of the capital ship is now under consideration. For the cost of one battleship a thousand torpedo-carrying seaplanes could be built, and it is already questionable whether a battleship could survive an attack launched by even a small force of this mobile arm. Fleets operating near the enemy's coast will be vulnerable from land aircraft bases, and as the radius of aircraft action increases, close blockade will be rendered more and more difficult. Another form of air operation may prove to be that of gas attack from the air, in cooperation with submarines, on naval bases. In view of such developments, though it is impossible at present to judge between the conflicting opinions as to the future of the capital ship,

it is certain that aviation will materially modify naval tactics and construction.

The war lasted long enough to prove the value of the strategic offensive by air. Modern warfare on the grand scale exemplifies the doctrine of the "Nation in arms." Not only armies in the field, but men, women and even children at home are concentrated on the single purpose of defeating the enemy, and armies, navies, and air forces are dependent upon the application to work, the output of war supplies and, above all, the morale of the civilian population. War must therefore be carried into the enemy's country, his industries must be destroyed, his nerve centers shattered, and the morale of the nation as a whole shaken. This can largely, and will increasingly be effected by air attack on industrial and political centres. At the outbreak of a future war we may expect to see, in addition to the specialized employment of aircraft in cooperation with military or naval forces, huge day and night bombers immediately set out to penetrate over the enemy's country, and an independent concentration of fighting machines to produce, if possible, a shattering blow on the enemy and obtain from the outset a supremacy in the air comparable to our supremacy on the sea in the last war. In 1914 it was some 20 days between the declaration of war and the exchange of the first shots. In the next war between great powers a mobile force of aircraft will be ready for action before the signature of the declaration is dry, and the air battle will be joined within as many hours.

I think I have said enough to indicate the terrific potentialities of aircraft as a fighting arm. The problem before us is how to provide, not only powerful air forces, but also the means of rapidly expanding them, without which our naval supremacy will be imperiled and our industrial centers, upon which our military supplies depend, will be open to destruction from the air. No country is likely to possess sufficiently large air forces to obtain a decisive victory, or at any rate an uncontested supremacy, at the outbreak of war. We can not afford to keep our air forces up to strength any more than our army or navy. The problem is, therefore, how to insure an adequate reserve and maintain our capacity for expansion to meet emergencies. We can, of course, maintain a fixed number of machines and pilots in reserve for every one on the active list, but although some such system is necessary, its adoption on a large scale is open to many serious objections. First of all, it must keep inactive at considerable cost a number of machines which may never be used and which quickly deteriorate. Knowledge of aeronautics is still so slender, improvements are made so continuously, that machines may become obsolete even before they deteriorate. Moreover, the growth of service aviation in peace must tend to become artificial and conven-

tional rather than natural, and this will react on design and construction, which will be cramped, both from the technical and financial points of view, within the limits imposed by service requirements. It is obvious, therefore, that the capacity of the construction industry to expand can not be fostered by service aviation alone, and, in the event of another war of attrition, expansion will be more important than any amount of machine reserve power immediately available.

The solution of this problem, according to my firm belief, lies in the development of civil aviation. We look for an analogy in the navy and the mercantile marine. The navy owed its origin to our mercantile enterprise, and to-day it depends upon the mercantile marine for its reserve power of men and material. In the same way must air power be built up on commercial air supremacy. A large commercial air fleet will provide a reserve of men and machines, though it must be remembered that service and civil types of machine will diverge so that the greater the development of the civil type the less will be their utility for war requirements. The vital importance of commercial aviation is that it will keep in existence an aircraft industry, with its research, designing, technical, constructional, and experimental staffs, capable of quick and wide expansion in emergency, and such an industry will not be employed in the design of contrivances for use in a possible war, but in meeting the requirements of everyday air transport and navigation. Thus a natural, practical, and healthy, as opposed to a stereotyped and artificial, growth will be insured. Our naval supremacy is largely attributable to the interest which people as a whole have traditionally taken in naval policy; in other words, to the fact that we are a seafaring nation. Similarly, air supremacy can only be secured if the air sense of the man in the street is fostered and aviation is not confined to military operations, but becomes a part of everyday life. The nation which first substitutes aircraft for other means of transport will be more than halfway toward the supremacy of the air.

TORPEDO PLANES.

Source: Reliable.

31 March, 1921.

(14349.)

The following opinion was expressed as being not only personal conviction, but also as representative of the sentiment in German naval aviation:

One of the great fields of usefulness of aviation to a navy is attacking capital ships with torpedoes carried by aircraft. The value and effectiveness of torpedo planes greatly exceed the value of bombing planes. For that reason the German Navy from the beginning of

1917 onward endeavored to develop not only torpedo seaplanes and torpedo-launching devices, but also a type of torpedo particularly suited for aircraft work. The principal constructors of torpedo planes were the Gotha, Brandenburg, and Friedrichshafen (not Zeppelin) concerns. Of these three, more Gotha machines were used, simply because that company was already producing a large airplane for army bombing that could easily be converted into a torpedo-carrying seaplane.

Capt.-Lieut. Faber was one of the first officers in the German Navy to go into aviation. His training was received on early French and Curtiss types of planes. He was on aviation duty throughout the war in various places, but primarily in executive capacity. He is one of the few German naval officers of aviation experience retained in the service under the new peace-size régime. He is now on duty in the admiralty, Berlin. His opinion is considered reliable and of value.

Regarding practical usage of torpedo planes, the point was made that German development had not reached a stage where pilots could sufficiently rely on the machines to get in close enough and get away safely after letting go their torpedo. For that reason there was a certain hesitation among the flying personnel to undertake this kind of work. Particularly strong was the objection to the Gotha machines, and partially on that account the torpedo-plane work during the summer of 1918 failed to progress as well as expected by the admiralty. Christianson was in the German merchant marine before the war. During the war he proved himself by far the best fighting pilot in German naval aviation. He was in command of the squadrons based during summer of 1918 in the vicinity of Bruge and Zeebrugge. His opinion on practical operating conditions can be accepted as excellent.

SUBMARINE SEAPLANES IN THE GERMAN NAVY.

Source: Reliable.

31 March, 1921.

(14351.)

From reliable sources in the German Admiralty it has been learned that the German Navy planned to equip every large submarine with a small seaplane for scouting purposes. All submarines and submarine cruisers larger than the coastal type built for service in the English Channel or in other places close to a base were to be included in this category.

Designs for such planes were submitted by several firms and samples built by Brandenburg and L. F. G. companies, among others. The admiralty favored the L. F. G. type and placed their first order with that concern.

NEW DETAILS IN CONNECTION WITH METAL AIRPLANES (TRANSLATION).

Source: Reliable.

(14136.)

A short time ago the Junkers-Werken A. G. in Dessau delivered a large number of metal (duraluminium) traffic monoplanes to the United States of America. The apparent reason for this order lay in the good, all-around construction, the great cargo capacity, and the correspondingly high speed. After a hard usuage of about four months a number of cracks appeared in the wings of this type so that to-day there is a generally justified mistrust against metal planes.

As a result of the latest experiments which have partially taken place in the laboratory of the above-mentioned firm, these cracks are found to be principally due to two causes: (1) To an early depreciation of the duraluminium employed; (2) to an electrolysation of the material which eventually has catastrophic results.

Concerning the First Cause.

As the result of regular and continual shocks the atom structure of a metal is subjected to a continuous alteration. These cellular transformations, caused by the accumulated vibrations that are unavoidable in motor aircraft, manifest themselves in a hardening of the cells and a slower rotation of the atoms. The cracks usually exhibit crystal-like grains, although the metal was thoroughly tested before being used and was declared to be in perfect condition. This so-called tiring (wearing) of the material occurs fairly rapidly, aided by the repeated changes in temperature and the concomitant shocks.

Concerning the Second Cause.

It stands to reason that different kinds of metal are used in the construction of different parts of a metal airplane—for example, an exceptionally good alloy steel is used for struts, foundation, and wings; duraluminium for coating; brass or bronze for bearing; copper for pipes; etc. These materials are almost all conductible and, joined together, form an electric contact series. The conductible value of the metals in the contact series is as follows: (Minus) copper, zinc, lead, iron, steel (according to the alloy used for refinement), aluminium plus. If a metal airplane is now subjected to dampness (dew, fog, rain) or to a sprinkling by sea water, an electric current will be generated in the metals of the galvanized chain. The dampness acts as an electrolyte and causes the dissoluble metal electrode to deposit a positive metal solution on the electrolyte, while the positive metal ions from the electrolyte pass over to the electrodes. Every material possesses an individual power of bringing cathions into solution. This electrolytic solution pressure becomes effective when the metal is dipped into the watery solution of one of its salts,

and all the more so, the fewer cathions are in solution and the smaller the osmotic pressure. The entire procedure is something similar to the generation of current and the metallic waste in a galvanic cell.

These alterations in the material cause such cracks in the surfaces subjected to them as were noticed in the Junker planes.

Result.

These experiments have therefore shown that the metal known to us up to now in its present technical form is not suitable for constructive material for airplanes, which must be able to withstand, if necessary, all the atmospheric influences. The airplanes of wood are therefore decidedly preferable because the metal parts are naturally separated from one another by wood, linen, varnish, etc. And there is also no question as to the greater simplicity of repairing a wooden plane.

TORPEDO BOATS, MOTOR TORPEDO BOATS, AND DISTANCE-CONTROLLED BOATS.

Source: "Die Technik im Weltkriege" (Practical Science in the World War), Schwarte, Berlin, 1920; Published by Ernst Siegfried Miller & Son.

(13794-A.)

Torpedo Boats, by Naval Constructor Kertscher, Imperial German Navy (pp. 355–367).

Before the War.—While the foreign navies were constructing two types of torpedo boats—small torpedo craft for coast defense and large torpedo boats (destroyers) for naval engagements—with us the torpedo boat only in the sense of the "large torpedo boat" was further developed. In accordance with the customary torpedo-boat tactics of the German Navy, the torpedo boats were compelled in order to carry out the maneuver of penetration through the battle lines to have their dimensions as limited as possible. The requirement that the vessels should present as small a surface (silhouette) as possible made it necessary to cut down the superstructure and the above-water portion of the vessel as far as possible. To obtain as small a displacement as possible, the limit of the admissible strains on the construction parts must be placed essentially higher than customary in ship construction and, furthermore, a material must be employed which was especially manufactured for torpedo-boat construction and which possessed a considerably higher rigidity. Great turning capacity, a main requirement for vessels maneuvering in close quarters, was accomplished by a second rudder placed under the bow of the vessel. This bow rudder, equally with the stern rudder, was controlled by a steering engine and when not in use could be withdrawn into the ship so that in passing over mines and other barriers the vessels were not endangered by the projecting rudder. By the

employment of the bow rudder the turning circle of the vessel was diminished by 25 per cent, so that a turning circle diameter of 310 meters was obtained. The entire construction of the vessel was carried out from the standpoint of the maximum possible economy in weight, and therefore all living quarters and storage space compartments were reduced to the lowest limit admissible, so that all extra weight and space could be used for the engines and the storage of fuel.

The large torpedo boats had four above-water single torpedo tubes, two of which were in the midship line and could be turned in any direction, and one on either side in the space between the forecastle and the bridge on the upper deck. The two guns were placed one on the forecastle and one on the after deck.

By the employment of turbine drive, which for the first time was experimentally tried in 1903 and 1905 and has been always chosen since 1907, the torpedo boats, built by the firms of Germania, Schichau, and Vulkan, made splendid records in the speeds obtained. The boiler plant consisted of boilers for both coal and oil firing. The heating surfaces of the coal and oil boilers was 5 to 1. This ratio was changed in the last few years to 1.3 to 1.

Up to the year 1910 the size of the vessels steadily increased. The next two years brought another change. The military requirement for diminution of the displacement and of the length so as to obtain a great maneuvering ability compelled the utmost use of the vessels in regard to space and weight, and in this respect the vessels of the years 1911 and 1912, *V 1–6*, *G 7–12*, and *S 12–24*, represented a brilliant technical achievement. In a vessel about 17 per cent smaller the same fighting values were contained. This was obtained by a saving in weight almost exceeding the limit of the admissible in the construction of the vessel, engines, and other things, also by increasing the oil firing; in this way, too, the length of the stay at sea was greater, as the speed of the vessels equipped with coal firing, especially in bad weather, was decreased by not having sufficient personnel. On account of their diminished displacement the boats lost considerably in seaworthiness. It was necessary to economize too far in space and consequently, among other things, bringing the coal from the cramped bunkers to the coal boilers in bad weather was an impossibility. The question whether to use oil or coal firing was furthermore an economical one, as in the German Empire the supplies of oil were so scanty that a supply of them during the war had not seemed certain. So technique was not yet in a position to get the utmost out of the vessel. This first was possible in 1913 when new ships were put in commission, which with their pure oil firing showed increased speed, more powerful torpedo armament, and essentially greater ability to stay at sea as a consequence of their increased displacement.

By increasing the size of the vessels by only 100 tons it was possible to give the vessels six 50-centimeter tubes. Two of these were placed as double tubes behind the forecastle. As the double tubes could be turned to all sides, hence a broadside of five torpedo tubes was obtainable, a powerful increase in attacking force which was accentuated by the fact that the caliber of the torpedo was increased and likewise its explosive charge. An electrical central discharge of all tubes from the bridge insured a maximum advantage from this highly valuable armament. Also the auxiliary armament, the artillery, was improved by increasing the length of the caliber of the guns so that a greater range was attained. By the installation of an electric order transmission system also, these weapons had a better effect.

The speed of these vessels was constructively increased to 34 knots; actually, however, to over 38 knots, especially in the case of a vessel of the Vulkan Works, which had an engine output of 24,000 effective horsepower. The exclusive employment of boilers with oil firing insured the maintenance of maximum speed even in bad weather.

In the case of the boats turned out in the following year, 1914, *C–37*, *V–48*, by increasing the oil supply an increase in the sailing radius was obtained. Similar plants were also installed in the later vessels *V–83* and *V–84*.

The vessels *V–25*, *V–48* represent the actual modern German destroyer type, which can unquestionably be considered as a high product of German technique. With the beginning of mobilization, contracts for 48 of these so-called Ms-boats, the *S–49*, *G–96*, were given to the three works, Schichau, Vulkan, and Germania, to be completed as soon as possible. Also the orders for foreign navies placed with German works were used by us. The four large 1,700-ton destroyers building at the Germania Works for the Argentine Government were taken over and made ready according to the German type of vessels, especially in regard to the torpedo armament. They were given four 10.5 centimeter guns. The speed of these vessels with nearly 34 knots fell considerably behind the performances of the German vessels. The firms of Blohm & Voss and the Vulkan Works had torpedo-boat turbine plants in construction for the Russian Government; according to statements of the torpedo board for both firms 1,700-ton destroyers were being constructed with an armament equal to that of the Argentine vessels. Even after $4\frac{3}{4}$ months the firm of Blohm & Voss, although they had previously not built any torpedo boats, delivered the first vessel, to the greatest satisfaction of the German Navy. The vessels developed with about 41,000 effective horsepower a speed of over 38 knots, which was exceeded by those of the Vulkan Works by only 0.2 knots. Finally the small 400-ton torpedo boats in construction for the Dutch Government at the Vulkan Works were made ready for the German Navy.

During the War.—The course of the military operations on hand influenced likewise the construction of torpedo boats in the early months of the war. The 84 torpedo boats delivered and in the process of construction were jeopardized by the delay in importation of fuel oil from Galicia and Rumania. There was no longer any certainty that the supplies of oil on hand in Germany that came from these lands would last long enough in view of the increased use of it for U-boats and torpedo boats. It was therefore obligatory to give up the advantages of the oil firing. This meant a considerable delay in building and an interruption to the works laboring strenuously day and night. It was not only a question of altering the inner construction of the boats, but also the boilers must be entirely transformed. In some cases the construction of the vessels had gone so far that the change would not be undertaken. This danger threatening the construction of the torpedo boats, and thereby the fighting power of the German fleet, must be unconditionally avoided. Finally it became possible by increasing the native production and use of German tar oil to insure the necessary amounts of fuel. In this way the recent return to coal boilers would be again given up and the original construction and oil firing would be employed. The loss in time caused could not, however, in spite of strenuous efforts at the works, be made up.

The change in the tactical employment of the torpedo boats during the war, long scouting trips, attacks with cruisers on the English coast, insuring the outpost service of our own mine-laying and sweeping units and of merchant vessel intercourse, all caused a fundamental change in the requirements made for the large torpedo boats as a consequence. The originally required sailing radius turned out to be too small. The seaworthiness of the older boats did not suffice in the attacks carried out in the worst weather by the more seaworthy cruisers. The artillery armament had begun to assume greater significance. This meant especially from the technical standpoint an increase in the oil supply, enlarging the vessels and installation of larger guns. The latter was quickest carried out as the change in gun mounts in the vessels not yet constructed could be accomplished without preliminaries. Increasing the oil supply, however, encountered considerable difficulties. A subsequent installation of oil bunkers was a hazardous enterprise in view of the practical accomplishment of it on a completed boat; on the other hand, by the increased load an enlargement of the displacement and consequently a diminution of the speed and a considerable depreciation in seaworthy qualities were occasioned, as in the ship's hull and engine plant no improving changes could be undertaken in the time available. This all had to be taken account of in a military way. In the case of vessels the construction of which had not yet progressed far these

disadvantages could be obviated, partially at least. The vessels were pulled apart on the way for a distance of some meters and a new section with oil bunkers inserted. The deeper draft of the vessels was to a certain extent removed by enlarging the displacement which restored the earlier seaworthiness. Increasing the number and caliber of the guns from two 8.8 centimeters to three 10.5 centimeters required also an increase and improvement in the artillery order transmission. The hitherto employed speaking-tube installation was supplemented by extensive telephone connections and other electrical order transmission means. Special order stations had to be installed on the very cramped bridge, already fitted out with large distance measuring apparatuses, projectors, and other artillery auxiliaries. Finally the order transmission was supplemented by a central, electrically actuated direction indicator, designed by the firm of Siemens & Halske by which the figures for distance and direction are given for the guns, projectors, and distance-measuring apparatuses. This all necessitated a greatly augmented crew and it was only possible with great difficulties to house the men in the cramped quarters.

The successful employment of large torpedo boats as a defense against enemy U-boats required too, for other reasons, a considerable increase in the previously attained speed as in view of the constantly increasing surface and underwater speed of the U-boats the previous speed of 17 knots for torpedo boats was no longer sufficient. The advantage of the previously increased oil supply was again lost through the greater use of oil as a result of higher speed. It was compulsory therefore to subsequently increase the economy of the engine plant. This was accomplished through the employment of pinion intermediate gear which was adjusted for a speed of 23 knots of the main engine plant. The Germania Works first succeeded in mailing an effective gear of this kind, which was soon followed by similar ones at Vulkan and Schichau.

For defense against U-boats the vessels were supplied with depth bombs that were dropped from the stern, a very effective means of attack. In addition, the boats were given a U-boat kite. This device consisting of a fair-leader system with explosive charge, towed after the vessel and kept by the fair-leader action at a certain depth. On touching a U-boat by the detonation of the explosive charge, a deadly injury to the U-boat usually resulted. Since, as a consequence of strong enemy opposition through mines, even the large boats were used for mine sweeping, these vessels were also given extensive mine sweeping equipment. The mine equipment for torpedo boats was given up after a while, as the mine laying was carried out by other vessels, especially by U-boats. These new demands and the other experiences of the war were considered as far as possible in the con-

struction of the above-mentioned 72 vessels and the 95-Ms boats still building in so far as it did not lead to too great a lengthening of the time required for construction.

The endeavor to procure still faster and more efficient vessels required a completely new construction, and consequently much time, and on the other hand was the requirement to prepare as many vessels as possible in a minimum of time? Of necessity a compromise had to be made, and while keeping the main construction the vessels were perfected individually. The burden on industry as a whole from the U-boat construction and the demands of the army, especially the Hindenburg program, the greatly decreased efficiency of the workingmen, the difficulties in obtaining the material, the lack of coal and highly valuable raw materials, the employment of substitutes were extremely procrastinating events for construction. The question of material, the lack of copper, tin, etc., became a very serious matter for torpedo-boat construction; the extensive substitution of iron endangered the fundamental condition for the construction of valuable vessels; the lightest possible construction for it entailed an increase in weight of such a nature that the fulfillment of the maximum required outputs, especially in regard to speed, was jeopardized.

Therefore, in the last year of the war the long wanted improved vessel of the Ms type, with high speed and increased armament, came in. As a basis for the construction of this 1918 Ms boat (Table 18.3), there was selected a displacement of 1,500 tons and a speed increase of $2\frac{1}{2}$ to 3 knots. This extraordinary increase was made possible by the employment of the indirect propeller drive through pinion gear for all speed. This kind of drive was proved to be satisfactory, meanwhile, on the speed gear of the Ms boats and the pinion gear of the later to be explained A-boats. Unfortunately these boats awaited with great anxiety, the building of which was begun in 1917, and which in speed excelled all others, were never delivered.

Even before this the development of a quite new type of torpedo boat had been taken up. The inspection of the torpedo board had designed the 2,400-ton large destroyers of 1916 (Table 18.4), and construction on these was begun in 1916. The armament consisted previously only of 15-centimeter anticraft guns and 60-centimeter torpedo tubes. The boats were intended to attain a speed of at least 35 knots; they were equipped with all new auxiliary machines and means for torpedo and artillery armament and represented the highest achievement in fighting strength for vessels of that size. But these boats, too, were never used, as the first of them were delivered shortly before the collapse of the navy. As the trials could not be concluded, a determination of the maximum speed actually attainable was not possible. It should not be left unmen-

tioned that it was only possible in the first weeks of the war to conduct tests and trials in water deep enough to be safe for speed. As a consequence of the operations of the enemy it was compulsory to conduct the trials in the western Baltic, and therefore in shallow water. The speeds given here are influenced most unfavorably by the limited depth.

As, moreover, the increase in and preference for U-boat construction was an obstacle to the preparation of an increased number of torpedo boats, works had to be adapted to this kind of construction which hitherto had had no experience in the construction of torpedo boats. Finally, the Howaldt Works, which previously had built only battleships and cruisers, besides merchant vessels, in spite of their untrained force succeeded in building larger torpedo boats of great value according to the designs of the Germania and Vulkan Works to the entire satisfaction of the navy. Further, the construction of the hulls of such vessels was given to the Lubeck Engine Construction Co. and the works of Nobiskrug, at Rendsburg. The Imperial Works, at Wilhelmshaven, had the contract for a larger vessel according to the plans of the Germania Works.

The extent of the coast besieged by forces hostile to Germany during the war made compulsory the preparation of small torpedo boats for coast defense. For this purpose the German Navy had only older vessels with slow speed, insufficient power of staying at sea and antiquated artillery armament. A few months after the beginning of the war a contract for this purpose was given to the Vulkan Works for 25 so-called A–1 boats which were to be delivered within three-fourths of a year. These large torpedo boats of about 100 tons had two 45-centimeter torpedo tubes and a 5.2-centimeter gun and developed a speed of 20 knots. Half of these boats were to be employed in Flanders; in order not to expose them by transfer over sea to destruction by the enemy forces superior in speed, these boats were taken apart and shipped overland into the besieged region and there put together again in the German naval works. The same thing happened later with some A–II boats (table 18.5) that were meant for the Mediterranean and were put together at Pola. As a consequence of their manifold possibilities of employment there was an increasing demand for these small boats. They were also employed besides the coast service in U-boat defense, in outpost service, for the protection of blockade vessels in the mine zones, and as convoys for merchantmen. This many-sided use was conditional above all on an increased speed and an augmentation in the artillery. From these A–II boats were developed the A–II and A–II boats, which, with a displacement of 225 and 300 tons, respectively, with two engines, ran at over 28 knots. The artillery con-

sisted of two 8.8-centimeter anticraft guns, while on the other hand the torpedo armament was cut down to a 45-centimeter tube. Of these vessels 98 were assigned for construction to Howaldt, Schichau, and Vulkan Works. The boats of the Schichau firm were given the already-mentioned pinion-wheel main gear for all speeds and with the above-mentioned Ms-boats of the Germania Works, the basis for the further constructive development of the large torpedo boats. For the construction of the hulls of the A-boats were partially put together at inland shipyards, among other Holtz, Sachsenberg, the Oder Works, Seebeck, and Atlas Works, which, so far as the vessels were delivered, filled the utmost demands made in spite of scanty experience in torpedo-boat construction.

During the war 312 torpedo boats with a total of 299,457 tons were contracted for, and yet of these only 197 could be completed. Annually in peace time 12 boats were turned out. During the war the year's average rose to 78. The increases in the war as compared with peace are shown in the accompanying table.

The share of the individual firms was:

Boats ordered and delivered.

	Up to Aug. 1, 1914.	Up to Aug. 1, 1915.		Up to Aug. 1, 1916.		Up to Aug. 1, 1917.		Up to Aug. 1, 1918.		Up to November, 1918.	
	Large.	Large.	Small.	Large.	Small.	Large.	Small.	Large.	Small.	Large.	Small.
Ordered	12	60	29	20	48	38	22	54	18	.....	.....
Delivered	3	25	29	42	.....	15	38	16	24	2	4

Motor Torpedo Boats and Distance-Controlled Boats, by Lieut. Paul, Imperial German Navy (pp. 350–351).

In the course of the four-year war those weapons that had previously fallen into oblivion in former epochs, both on the land as well as on the sea, came again into employment or new means of defense were brought into the field as soon as the geographical nature of the theater of war or the tactics of the enemy gave occasion for it.

In the course of the naval war the nature of the coast of Flanders exerted an especial influence on the development of weapons both with us and with the enemy.

Long extensive shoals before the German bases hindered the English in bringing up close the heavier battleships. Therefore they used in bombarding places on the coast a weapon especially suited for this purpose—the monitor, long since vanished from the navies of all countries and brought it back in comparative perfection.

A similar weapon for opposing the heavily armored attacking monitor we did not possess. Submarines were inadmissible on account of their slight draft and mines were cleared out of the way by the mine sweepers sent out by the enemy.

In this embarrassing situation the thought occurred to equip small and very fast motor boats with a torpedo tube and use these motor torpedo boats against the monitors.

This thought was put into action and with an astonishing ability of adaptation and rapidity. Technique again met all the demands made upon it. Just half a year later the first six motor torpedo boats were put in commission ready for the front in Flanders.

In addition to these motor torpedo boats there was yet another means of defense against the naval forces of the enemy off the Flanders and Courland coasts which was developed for military service—the "distance-controlled boat."

These distance-controlled boats are fast motor boats without any crew which are steered from the land or air by electricity until in contact with the enemy vessel. By the shock of collision a powerful charge of explosive is detonated, causing a big leak at the water line of the enemy vessel, insuring its being sunk.

This new implement of warfare owes its construction to the initiative of the firm Siemens & Halske, Berlin, and the apparatuses for wireless control are produced by the Wireless Telegraph Co.

Both kinds of boats, motor torpedo boats and distance-controlled boats found repeated employment during the war. In Flanders the motor torpedo boats were used not only for purposes of attack and defense, but also in convoy service. In August of 1918 they made a successful attack against three enemy destroyers lying at anchor off Dunkirk. In summer of the same year an attacking distance-controlled boat put an English monitor completely out of action. In Courland, too, the motor torpedo boats destroyed several steamers and by their presence exerted a very powerful moral effect on the enemy. Naval forces of the enemy after the first appearance of these boats did not again venture to approach the coasts.

Source: Reliable.

(14284.)

16 March, 1921.

Notes on Some Features of German Warship Construction, by Sir Eustace T. D'Eyncourt, K. C. B., F. R. S., Vice President.

[Read at the spring meetings of the sixty-second session of the Institution of Naval Architects, March 16, 1921.]

At the end of the paper I read before this institution two years ago on "Naval construction during the war", I ventured to say that the work we had carried out during the war represented the culmination of half a century's efforts in developing naval design, and showed that throughout this period Great Britain had led the way not only in the personnel but also in naval matériel.

Since that date we have had opportunities which we never had before of thoroughly examining some of the most recent productions

of the German naval constructors, and I can say generally that we have seen nothing that tends to alter the conclusion that was reached previously. There were a few points, no doubt, in which the Germans excelled. As has been stated before, they had got ahead of us in developing Diesel engines, especially as adapted to submarines, and had produced engines with cylinders developing 300 horsepower against our standard engines, which only developed 100 horsepower. In spite, however, of this handicap, we had submarines which excelled those of the Germans both in speed and in armament. They also had splendid scientific instruments of all kinds, to which they had devoted great attention and research, and in some of these items I think they had the advantage of us. The design and construction of their ships generally was also sound and good on the whole, and, as has been pointed out, in their bigger ships they had the advantage over us of larger docks, which enabled them to build larger broader ships with greater initial stability. Also the additional breadth certainly gave an advantage in developing the designs of the heavier class of ships, since up to the time of the war we had to restrict the beam of our capital ships to 90 feet, whereas the Germans were able to go to nearly 100 feet. With our present docking accommodation, since early in the war, this disability has to a great extent been removed, although we still have not very many large docks, and there is a noticeable absence of them on the Clyde, where many of our biggest ships are built.

In view of the general interest now taken in warship design, and as the paper which I had the honor of reading last year on H. M. S. *Hood* has possibly increased interest in the question of naval design as it stands at present, I thought that, as I am in a position to do so, I would give particulars of some of the latest German warships, of which we now have a fairly complete knowledge. Mr. Goodall is also about to read a detailed account of the *Baden*, of which we have made a very thorough examination, and have in addition tried the model of that ship in the tank. I need not, therefore, enlarge much upon this very interesting ship, except to say that the general conclusion come to is that she was designed as soon as the Germans had knowledge of our *Queen Elizabeth* class, of which she is really a fairly close copy. When you have heard the particulars given by Mr. Goodall, I think you will agree with me that the copy is inferior to the original.

The main armament of the *Baden* is the same as that of the *Queen Elizabeth* and *Royal Sovereign*, but her speed is inferior to the former and her protection is inferior to that of the latter ship. In designing her, of course, allowance must be made for the disadvantage they labored under of not having all oil-fired boilers—a feature which

certainly gives a considerable advantage in speed, especially when the power has to be kept up over a long period.

The *Baden*, and indeed most of the more recent capital ships of the Germans, are subdivided more minutely than ours in some parts, but less so in others, so that the whole arrangement does not make for any greater safety in case of accident or flooding than in our own ships. Their arrangement of compartments involved a somewhat complicated system of flooding. They had a very well organized method of supervision, under a special officer, whose sole duty it was to look after the trim and safety of the ship; and I think there is no doubt this resulted, at the Battle of Jutland, in the saving of some of their very heavily damaged ships which would otherwise not have reached port.

In another respect also it is interesting to note that in more than one instance German battle cruisers were fortunate in escaping total destruction when, though their magazines were on fire, they did not explode, but only burnt. In fact, they seem to have had considerable confidence in the stability of their powder, as we find that they did not take nearly such elaborate precautions to prevent flash reaching the magazines as we did in our ships.

I give below tables of particulars of the more recent German battleships and battle cruisers, together with tables of our own contemporary ships.

In considering the particulars of the ships given in these tables, and also in view of what took place at the Battle of Jutland, perhaps the class of battle cruisers on the two sides are the most interesting ships to consider.

The first British battle cruisers were commenced early in 1906. The German reply to these was the *Blücher*—a ship of very inferior design, as seen from the particulars, and which was destroyed in the Dogger Bank action. On learning the particulars of *Invincible* class, the Germans followed with *Von der Tann* and *Moltke;* and from then onward the chief difference between the German ships and our own was that whilst our vessels had a higher speed and heavier guns, the German ships had thicker protection, smaller guns, and less speed. It should be remembered, however, that after the *Tiger* no British battle cruisers were built for some time on account of the development of the fast 25-knot battleships of the *Queen Elizabeth* class, which were much more heavily protected and gunned, whilst having nearly the speed of the German battle cruisers; the Germans continuing on their part with the construction of the *Hindenburg* class. *Repulse* and *Renown* were built by us for a special purpose, with heavy guns, great speed, and light protection, and should be regarded as a special type for a special purpose.

In reviewing the whole history of battle cruiser design, I can not help thinking that it was unfortunate that it was decided virtually to repeat the *Invincibles*—a design already becoming obsolescent—when the *Indefatigable* class was ordered, instead of developing an improved design with protection which should have been at least equal to that of the *Moltke* and *Goeben* of about the same date.

It will be observed, however, from the dates quoted that German battle cruisers have been often compared with much earlier British cruisers and referred to as contemporary, when the German ships were designed after the British with increased protection.

The outstanding impression conveyed by a comparison of British and German designs is that the former were built for attack, as they are superior in caliber of heavy guns in speed and ahead fire, while the latter were built for defense and a retiring action, as relatively more weight has been given to protection than armament, and up to the *Derfflinger* the heavy guns develop a maximum fire aft. It is interesting to record this, as it shows that the naval strategists of both nations correctly foresaw the part which these ships were likely to play.

In comparing the battle cruisers of the two fleets, the heavier armament of the British ships is very noticeable, and even at the close of the war the Germans had no battle cruisers with a heavier main armament than the first British cruisers of the *Invincible* class, designed 10 years earlier.

Making a comparison of the battleship designs, it is shown in the particulars of the German ships that they generally followed in our wake; but the same remarks as regards heavier armament apply to the battleships as to the battle cruisers, we being generally far ahead of them in the caliber of the big-gun armament; so that, regarded as a whole, although the protection may have been somewhat less than the corresponding German ships, their ships had to meet the fire of heavier guns than ours, so that relatively the protection was approximately equal.

In the arrangement of the armament they also generally followed our lead, and in the main features it is difficult to discover any point of superiority in the German designs.

In underwater protection the German ships provided a more continuous protective bulkhead than we generally fitted, whilst our protective bulkhead was thicker than theirs in most cases in way of the magazines.

With the exception perhaps of the *Lutzow*, which was first disabled by gunfire, no modern capital ship of either side of date later than *Dreadnought* was sunk in the whole war by torpedo—a fact which should be kept in mind by those who talk about the vulnerability of modern capital ships to underwater attack. The *Marlborough*, as

has been previously stated, was torpedoed, but remained in the line and finally returned to port.

As regards seaworthiness, the German capital ships do not appear to differ very much from our own. They had generally a somewhat greater metacentric height, which, whilst increasing their initial stability, would tend to increase the rolling in a seaway with waves of a certain period; but this feature does not seem to have affected them, regarded as gun platforms in the North Sea.

As regards the strength of German ships, careful calculations have been made, and these show that the German vessels generally of all classes were somewhat more lightly constructed than our own, and taking bending moments on the same basis, I find that the German ships generally accepted stresses from 10 to 20 per cent greater than have been allowed in British ships. For local strength, some of their plating seems extraordinarily light. For instance, in the *Baden* the outer bottom plating is only five-eighths inch thick, whereas our corresponding plating is 1 inch. It appears to me that their scantlings are in many cases hardly sufficient to stand local strains and ordinary wear and tear.

Light Cruisers.

To the light-cruiser class I do not think it is necessary to refer at great length. For purposes of comparison I give in tabular form the particulars of the German cruiser *Koln* with one of our later *D* class cruisers. None of the German cruisers had adopted all-oil firing for the boilers, as we did in all vessels after and including the *Arethusa* class. This feature gave us a great advantage, resulting in our generally having a speed of about 2 knots more than the corresponding German ships. We also adopted in most of our later ships the arrangement of having all the main armament on the center line. This was a very convenient arrangement for director firing, and also gave us the advantage of having all the guns able to fire on either broadside; and, in fact, for the same broadside fire, a saving in number and weight of guns is thus effected compared to any arrangement in which the guns are placed on each side of the ship.

The chief difference between the two types was that the Germans generally provided a light protective deck over the machinery and thickened the side plating to a total of about 2 inches, whilst we had thicker side plating up to 3 inches and had no protective deck immediately over the machinery, although the upper deck being in any case pretty thick for strength purposes gave a considerable protection to the engines and boilers. Our oil-fired boilers were much larger than the German coal or coal and oil fired ones and being fewer in number required less floor space but more headroom.

As in their larger classes, the Germans accepted higher stresses on the material, which was of reduced scantlings compared to ours; but in spite of this their ships were generally larger and of greater displacement than ours and of less speed.

The accommodation in the light cruisers, and indeed in their ships of all classes, was undoubtedly inferior to our own, the spaces allowed for the crew being considerably less than ours and their ventilation and general arrangements for comfort being inferior.

The efficiency of their water-tight subdivision also in the light cruisers was to a large extent spoiled by perforation of the bulkheads by ventilation trunks, etc.

The fuel endurance was about equal to our own, generally speaking; but some of their coal was in many ships stowed in very inaccessible positions.

In rapidity of construction, the information we have shows that both in capital ships and smaller vessels the Germans were not able to compete with our rate of building. They generally took from three to four years to build a capital ship against our two to three, and about the same relative time for light cruisers. They never accomplished anything like our building of *Renown* and *Repulse* in 20 months from the date of order of commencement of the design.

Torpedo Craft.

As regards prewar designs of torpedo craft, the most notable difference is that the British designs have greater displacement and dimensions than their German contemporaries.

This is due to the British demand for boats able to keep the sea, which results in the provision of ample freeboard and a long forecastle.

The German craft generally have about 2 feet less freeboard and quite a short forecastle, leaving in most cases an appreciable length of open deck between the after end of forecastle and bridge front, liable to be swept by seas when steaming at any speed.

As regards speed, there seems to be not very much to choose between the earlier German and the British classes, until we come down to the later vessels, when the Germans fell somewhat behind in the matter of speed, largely due to the fact that they did not adopt mechanical gearing as we did, thus losing the advantage that we derived form more efficient propellers.

As regards armament, the German boats generally had fewer guns and those of smaller caliber than the corresponding British boats, and the German vessels carried, generally speaking, more torpedoes, though up to recently their torpedo tubes were as a rule of less diameter than our own.

The German boats may generally be described as more purely torpedo boats and less purely destroyers and not so seaworthy as the British craft.

As regards accommodation, spaces seem limited, and an appreciable number of ratings as well as officers are berthed aft in the German boats.

The fitting of the main machinery in two compartments and each boiler in a separate compartment, also the oil fuel where carried, in tanks amidships, are features of all the German boats which lead to reduced space at the ends of the boat for accommodation and stores.

The British arrangement has the advantage of providing more space at the ends, and a long forecastle, in addition to giving more accommodation space, protects all the entrances to the living quarters below the upper deck forward.

As regards strength, as in other classes, the German designs have accepted greater stresses than the British, and the ratio of length to depth of girder in the German torpedo boats is greater than ours.

As regards machinery and fuel, the Germans retained coal as the main fuel up to and including the 1912–13 class. From 1914 onward they used oil alone, so that, generally speaking, the German boats have less endurance and larger crews than the British, and in many of their boats the stowage of coal abreast the engine room must have been very difficult to work in a seaway. In some cases they increased their fuel stowage by carrying a considerable quantity of coal in bags on the upper deck.

In their newer designs belonging to the 1913–14 class, the displacement was a little less than 1,100 tons. They still retained the low freeboard and short forecastle of the earlier classes. These vessels had twin-screw direct drive, and in some boats Föttinger transformers were introduced, but it is understood that this was given up in the latest classes of all.

The German designers and builders do not seem to have paid much attention to mass production and standardization, each builder apparently being permitted to follow his own particular form and practice.

Following on our introduction of the larger class of vessel, viz, the flotilla leaders, the Germans designed and built 12 leaders during the war as against our 28, and in August, 1916, the Germans ordered the *S–113* class of large leaders, mounting four 5.9-inch guns and carrying six 23.6-inch torpedoes; but none of these vessels was in commission at the time of the armistice.

A class of large torpedo-boat destroyers of about 1,500 tons also appears to have been due for launching in 1918–19, but no particulars of these are available. These vessels probably corresponded to our larger *V* or *W* classes.

To sum up, a careful investigation of all the particulars we have shows that the Germans generally followed the British practice in size, increased speed, and heavier armament. They paid great attention to reductions of weight, but there is no question that their boats had not the sea-keeping qualities of the British contemporary craft.

Submarines.

Last year Mr. Johns read a very illuminating paper on the subject of "German submarines," and those interested in the subject were therefore able to compare the particulars of the German vessels with our own, which latter were given in my paper of the preceding year.

It should be borne in mind that it was in the construction of submarines that German shipbuilding was principally engaged during the later stages of the war, and we know what extravagant hopes were placed upon this hitherto little-tried type of warship. At the armistice 14 shipbuilding yards were engaged upon this work, one yard having 40 craft under construction. Forty-six submarines had been ordered when war broke out, and these, with 764 placed during the war, made a total of 810 boats. Of these about half the number, viz, 380, were completed, of which 203 were lost. During the last 10 months of the war the numbers of submarines completed by the Germans only slightly exceeded the number lost, viz, 80; in fact, the rate of their destruction was steadily and rapidly increasing compared to the rate of production. This fact should be considered carefully by those who advocate the adoption of submarines to the exclusion of other types of warships.

The German submarines can be divided into three main groups, viz, (*a*) the smaller submarines intended for coastal work and based on the Belgian coast, i. e., UB and UC boats, many of which were mine layers; (*b*) the medium-size or patrol boat used for general service, or ordinary U-boats; and (*c*) the larger or cruiser type, with large endurance for ocean work, and probably particularly intended for use against the American coast and transports. Each of these three groups can be divided into two types, viz, (1) mine layers and (2) torpedo craft. Guns were latterly mounted in all boats.

As experience was obtained on service, the boats of each group increased in size, until in the later stages the latest of one group was nearly as large as the earliest of the next group.

The earliest boats of the coastal group were built in sections, transported by rail, and erected on the Belgian coast and at Pola and Constantinople. Later boats of the same group were too large for railway transportation and proceeded to their destination by sea.

Extraordinary reports as to the short time taken to build German submarines appeared in the allied press during the war, and were

used by high authorities for unfavorable comparison with our own times. The large number of submarines ordered permitted of more being delivered in a given time, but information published in Germany clearly shows that the time of construction required was appreciably greater than for a British boat of the same displacement. In the case of the smaller types the time of assembling the already completed parts was often short. The cost was also greater and increased rapidly.

As the war proceeded, both the torpedo and gun armaments of the submarines were increased. In the earliest boats the 450-millimeter (17.72-inch) torpedo was carried, but in later boats the 500-millimeter (19.68-inch) weapon was substituted. Four bow and two stern tubes was the usual arrangement in all boats. As with the torpedo, so with the gun, size was increased. Before the war no guns were fitted in German submarines, but as the war developed, first 3½-inch, then 4.1-inch, and finally 5.9-inch guns were fitted. The advantages of the gun over the torpedo for the attack of merchant ships are obvious, especially where the gun of the submarine outranges that on the merchant ship.

Similar increases in size of torpedoes and guns took place in British submarines, although 21-inch torpedoes were included in designs of submarines prepared before the war.

The most interesting submarine built by the Germans was that of the cruiser type. The largest completed was *U–139–41* class, with a length of 303 feet, beam 29½ feet, and draft 15 feet, and of 1,950 tons' surface displacement. These were fitted with two main engines, each of six cylinders and developing 1,750 brake horsepower each, and one auxiliary engine of 450 brake horsepower, making nearly 4,000 total horsepower. The auxiliary engine drove a generator which could be used for charging the batteries or for surface propulsion at low speeds through the main motors. The surface speed was 16 knots, and endurance 18,000 miles at 8 knots. The fuel normally allowed for was 100 tons, but by utilizing ballast tanks for fuel stowage this could be increased to 390 tons, giving the endurance quoted. The submerged full speed was 8 knots. Two 5.9-inch guns were mounted. Three boats of this class were surrendered, but only one had seen service.

A larger cruiser class was building at the time of the armistice, in which two 3,000-brake horsepower engines each with 10 cylinders similar to those in the 1,750-brake horsepower engines of *U–139* were to be installed. A 450-brake horsepower auxiliary engine was also fitted. Three 5.9-inch guns were to be carried. The surface displacement was 2,160 tons, and endurance about 25,000 miles at 8 knots.

The Germans never produced a boat of the speed of our K-boats, nor did they adopt steam for the surface speed, as we were obliged to do in our K vessels to get the high power required.

Early in the war German submarines were used against warships, but in the later periods their chief use was in sinking merchantmen, and few warships were sunk; whereas British submarines had generally no enemy merchant ships to attack and had to confine their attacks to warships, and toward the end the warships available for targets were vessels of their own type.

This difference in the functions of the submarines of the two navies accounts for many of the differences in design. Generally our submarines had more surface and submerged speeds than the enemy craft, and a great part of this difference appears to have been due to a better form. Thus *U–135*, with engines of 3,500 brake horsepower, had a speed of $17\frac{3}{4}$ compared with 19 to $19\frac{1}{2}$ knots in J-class submarines of the same displacement and fitted with three engines each of 12 cylinders and developing a total of 3,600 brake horsepower.

To sum up, it is quite evident that in all their later designs the primary object held in view in the design of the German submarines was the attacking of commerce, and not so much the use of the submarines against warships; in fact, the longer the war went on the more it became evident that the submarine, whilst admirably adapted for the destruction of more or less defenseless merchant ships, became, as antisubmarine measures progressed, less and less effective against naval ships, and more and more liable to destruction.

It is not necessary to say very much about the smaller auxiliary craft, such as patrol boats, surface mine layers, motor launches, C. M. B.'s, etc. In all these classes the Germans do not seem to have done very much, beyond adapting trawlers and similar craft, as far as they could, to the purposes required.

They had few, if any, specially designed vessels corresponding to our sloops, our P-boats, our twin-screw or paddle mine layers, or our C. M. B.'s; and practically their whole shipbuilding efforts were devoted to the completion of their most efficient capital ships, their destroyers; but most of all, to the production of submarines. It should not, however, be forgotten that a great deal of their energy was also devoted to the construction of rigid airships, which no doubt often took the place of seagoing ships for scouting and reconnaissance work.

CONDITIONS IN CHINA ON 1 JANUARY, 1921.

Source: Reliable.

3 January, 1921.

(13141-G.)

THE PEKING GOVERNMENT AND ITS POWER.

The beginning of the year 1921 finds China in a state of chaos with confusion and disorder rapidly spreading through the nation. The Peking Government is apt to crumble and disintegrate at any time and peace between the north and south seems less likely than ever before.

China comprises to-day 22 Provinces and 2 Territories, and the Peking Government, of which the Tuchun of Manchuria is the military dictator, can be said to control the three eastern Provinces of Manchuria, Chihli, Shantung, Shansi, Honan, and Kwangsi—the remaining 14 Provinces and 2 Territories are either busy fighting each other or putting down internal strife.

It is generally admitted by the Chinese that the Peking Government is dominated and administered by Chang Tso-lin, Tuchun of Manchuria, Chang Chi-tan, minister of interior and Wu Chi-hsun, the secretary to the President, by whom the latter is completely controlled.

A more corrupt and worthless group of officials attempting to manage a government would be difficult to find anywhere.

The President has made thousands of taels on squeeze and his underlings have not hesitated to follow suit.

This fact is no secret to the Chinese masses and it is only a matter of time when the latter will overthrow their corrupt rulers.

An old American resident of China who has just returned after an absence of five years stated that the only change he could see in China was that the Government was more corrupt and dishonest than before and that the amount of "squeeze" necessary to do business in China with Government officials had doubled.

THE FAMINE.

One of the worst famines in the history of the middle kingdom is affecting the Provinces of Shantung, Honan, Chihli, and Shansi, and the present outlook bids fair to bring death by starvation and cold to above 5,000,000 souls.

The apathy and lack of interest shown by some of the Chinese Government officials toward famine relief coupled with the fact that it is generally known that some officials like Tsao Kun (Tuchun of Chihli) and Liang Shih-yi (the richest man in China) are profiteering in the purchase of food for the starving, has caused and created a deep and bitter hatred and resentment amongst the Chinese middle and lower classes.

COMMERCE.

The Chinese merchants have been hard hit by the sudden drop in the value of silver, due to the fact that although a silver value drop should favor Chinese exports the congested and overstocked markets of New York and London has made exporting inexpedient. Not for many years has China seen such a depression in the export and import business; Chinese foreign trade is to-day at a standstill. The lack of law and order has also affected the small Chinese trader in that he is afraid to ship or keep any large stocks of goods for fear of bandits or mutinous troops.

THE CHINESE ARMY.

The subject of the unruly and mutinous troops of China is one that is engaging the careful thought and attention of every foreigner and free-thinking Chinese in China. These troops variously estimated at about $1\frac{1}{4}$ million men are scattered throughout the 22 Provinces of China and fully 50 per cent of them are of the bandit coolie type and a terror to the inhabitants of the part of the country in which they happen to be. One often hears in China the saying and properly so, "The Chinese Army is a menace to China in peace time and useless in case of war." Mutinies have already occurred in several cities and in others—notably Hankow—they have only been averted by the Chinese merchants collecting sufficient funds amongst themselves to pay the troops part of their salaries which are months in arrears.

Chinese New Year falls on the 8th of February next year and this is the day according to Chinese custom on which all Chinese must settle and pay their bills.

This office has been keeping careful record of all troops' mutinies, and disorders are to be expected in the Provinces of Shantung, Chihli, and Kiangsu especially, unless the troops are paid off before Chinese New Year, and it is certain that the funds available for this purpose are small.

THE CONSORTIUM.

The Peking Government is giving the fact of unpaid troops and their tendency to mutiny wide publicity—the Chinese papers are broadcasting propaganda forecasting anarchy and terrorism in the event of lack of funds to pay these soldiers. The reason is all too evident, in that it is to deceive and fool the consortium, diplomats, and foreign business men into believing that some money must be advanced to pay off these mutinous troops and so forestall them from attacking foreign interests. It is nearly everyone's conviction that the greatest advantage that China and those who have the interests of China at heart can derive from the consortium, is a strict adherence to Lamont's principle of "loans to the Chinese Government for industrial purposes only." Lack of funds will cause the disin-

tegration of the present weak and corrupt Peking Government and troops may cause serious trouble, but eventually there must emerge a clean strong government in China, for one can't help but firmly believe that China must cure herself from within and that no amount of outside help can eradicate China's trouble. It's purely up to China to help herself and to destroy and overthrow the Tuchunate.

THE TUCHUNATE.

Ask any foreigner or any Chinese the question, What is the fundamental trouble in China? and the unanimous answer will be, the Chinese Army and the military governors of Provinces, the Tuchuns.

To talk of disbandment of troops by gradual disarmament and payment of salaries in arrears is ridiculous; it would necessitate a large staff of Chinese-speaking foreigners and a sum of money estimated by our late minister, Mr. Reinsch, amounting to $200,000,000 gold. There is but one method—stop all loans to the Government by which the latter can furnish funds to the Tuchun. Once the Tuchun is certain he will receive no further money for military expenses, that very day he will cease augmenting his military forces. The day the Chinese soldier realizes the Tuchun will never be able to pay his wages that very day he will start to mutiny against Tuchun authority and disband himself. It is true many of the soldiers will turn bandits with possibly a Tuchun or two as leader; but it takes money to buy ammunition, and guns without ammunition are useless, and if the foreign legations insist on the observance of the arms embargo the bandit activities will cease. This last year has seen the Italian smuggling arms into China and selling them at high prices; some American firms would have done the same but for the firm stand taken by the American legation. The British to-day are still supplying the Chinese with aeroplanes, knowing perfectly the latter will never be used for commercial purposes.

If the foreign powers will stop all loans except for industrial purposes and put an embargo on every and any article which might be of use to military forces, the Tuchunate will automatically disintegrate and vanish.

THE CHINESE NAVY.

The Chinese Navy lost its largest vessel, the *Haichi*, and eight other ships when they went over a few weeks ago to the Chen Chiungming government of Canton.

THE CHINESE PEOPLE.

The sad feature of all this turmoil and disorder is that the Chinese people have to bear the brunt of it all; these people are a peaceful and law-abiding lot who only want to be left alone, as any foreigner who has traveled in the interior of China will testify.

The Cantonese has no quarrel with the northerner and the Yunnanese has no quarrel with the Hunanese and Szechuanese, but it is

the Tuchuns of these provinces who to maintain their power must keep any other Tuchun from becoming all powerful.

GENERAL CONDITIONS IN THE PROVINCES AND TERRITORIES OF CHINA.

Manchuria: The Provinces of (1) *Fengtien,* (2) *Heilungkiang and* (3) *Kirin.*—Chang Tso-lin rules Manchuria with a strong hand and taking it all in all there is very little banditry and disorder in the province. The Chientao incident has been fully reported as also the state of affairs in Harbin. Manchuria is prosperous and but for occasional outbursts against the Japanese is quiet. The Japanese still continue to flood the country with morphia and opium through their own post offices.

One of the important events is that the Japanese have at last managed to obtain control of the building of the port of Hulutao. This port was the last hope the Chinese could even entertain of having a deep-water port in Manchuria not under Japanese influence. Chang Tsolin repeatedly offered this port to American and British capitalists.

(4) *Chihli.*—This province, comprising the seat of the metropolitan district of the capital of Peking naturally reflects the influence to which the Peking Government is subjected.

Troop mutinies have occurred in several places and only a short time ago a large mutiny was barely averted in the provincial capital of Paotingfu. This mutiny was different in that it was the first in which the soldiers' discontent was directed towards their Tuchun, whom they claimed had ample funds to furnish his Yamen but none to pay his troops' salaries which are months in arrears.

The Province on the whole is quiet and peaceful and only the southern part has felt the misery of the present famine.

(5) *Shansi.*—This Province is governed by an able and progressive man, Gov. Yen Hsi-shin.

Railroad and road developments are being energetically pushed along; also the governor has established a stock farm under American supervision with American range stock.

It is hoped to have the extension of the Peking-Fengchen Railroad to Kweihwa completed by the spring of 1921.

Yen Hsi-shan refuses to be embroiled in Chinese politics and has only a small army of about 20,000 men under his command; this action on his part is generally conceded to be the basis of Shansi's prosperity and orderliness.

(6) *Shantung.*—The military governor of this Province, Gen. Tien Chung-yu, has openly come out in favor of the abolition of the tuchunate.

The provincial assembly of this province gave the Peking Government a severe shock a few days ago when it notified the latter that it

was the intention of the provincial authorities of Shantung to elect their own governor.

The western part of this Province is famine stricken; at present we have a detail of 15 American marines assisting the Chinese Red Cross in famine relief work in this Province.

The activities of the Japanese in Tsingtao and Tsinan have been fully reported. The illegal export of salt from Tsingtao by the Japanese still continues as well as the illegal import of morphia by the Japanese into Tsingtao. The anti-Japanese feeling in Shantung amongst the Chinese is steadily getting stronger.

(7) *Shensi.*—Shensi Province is under the control of one of the most unscrupulous military leaders in China. Chen Shu-fan's record in China is so bad to-day that he has no friends and no alliance even among the reactionary political cliques. There has been no peace in Shensi for nine years. More opium is grown in Shensi than in any other Province, and as a result of officially encouraged opium growing Shensi is now in the grip of a serious grain famine.

Chen's former affiliations were all with the Anfu clique. Since the fall of this organization no one has dared to own him.

Wu Pei-fu recently confided to me that it was his scheme to have Feng Yu-hsiang, the famous "Christian general," go into Shensi and oust Chen, thereby relieving the distress of the Shensi people and opening up direct communications with the thoroughly sound Mohammedan elements in Kansu.

(8) *Kansu.*—Almost anything might be expected from Kansu at the moment. For many years the military strength of the Province has been in Mohammedan hands. These people have been averse to meddling in Chinese politics and have devoted all their energies to the protection of Kansu against the unruly elements in the neighboring Provinces. In this they have been eminently successful, and Kansu, full of half-savage and warlike tribes, has enjoyed perfect peace and as much prosperity as a remote territory without adequate communications could expect.

For seven years the Mohammedan military leaders have tolerated a Chinese military governor, Chang Kwang-chien, who has made everything out of the Province that it afforded and has put his relatives in every lucrative position. An excuse for getting rid of him came when the Anfu clique was broken up in Peking. Chang was an Anfu man.

Peking then suggested the appointment of Ma Fu-hsiang, the most enlightened and capable of the Mohammedan leaders, as Tuchun. This was met with a storm of protest from Chang's official friends and the dispute has been deliberately turned into a Mohammedan-Chinese controversy, which is extremely dangerous.

Fifty years ago such a dispute ended in a Moslem rebellion which kept half China in turmoil for 20 years and involved the loss of more than 10,000,000 lives. All the resources of the Imperial Government were required to put down the rebellion. China in her present disunited state has no such resources and a Moslem rising would be a terribly serious catastrophe. The only difference in the situation now is that the biggest of the Moslems is an eminently sane man.

Local papers now carry a story to the effect that he (Ma Fu-hsiang) has severed relations with Gov. Chang Kwang-chien and is planning to eject him from the Province. If he goes ahead with this project, he will undoubtedly succeed. If Peking wishes to save trouble it will probably recall Chang in time to prevent trouble. In any event the most likely outcome will be a provincial autonomy movement patronized by the Moslems, who are now also said to be in touch with Wu Pei-fu.

(9) *Honan.*—The Tuchun of Honan with headquarters at Kaifeng does exactly what he is told to do by Gen. Wu Pei-fu, who has his headquarters at Loyang with 10,000 of the Third Division garrisoned there.

There is a good deal of banditry prevalent in the vicinity of Nanyang, which Wu is gradually suppressing.

South of the Yellow River this Province has not suffered much from the famine. On the whole, the Province is prospering under Wu's protection.

The Yangtze Provinces of (10) *Hupeh*, (11) *Kiangsu*, (12) *Kiangsi*, (13) *Anhwei.*—The military leaders in these Provinces simply do not count at this moment. None of them is a strong man and each is at war with the irate provincials over such questions as provincial autonomy, local self-government, disbandment of troops, and the abolition of the tuchunate.

The middle classes throughout the Yangtze Valley are growing in political knowledge with amazing rapidity and are enthusiastic advocates of the above-mentioned reforms. Some prophesy a social revolution for this territory. Others believe that through the pressure of public opinion the military leaders will be forced, if Canton seems to be honest in her scheme for a federation, to link up with the Cantonese.

(14) *Chekiang.*—Chekiang, like Fukien, is essentially a southern Province. The tendencies of its people, who are among the richest and most intellectual in China, are radical in the best sense. The military governor, Lu Yung-hsiang, is a northerner and an old-type official, but is regarded as a particularly honest and courageous man, though possessed of no great ability and little political imagination. He was among the first of the Tuchuns to indorse the abolition of the tuchunate and, having put himself on record, would be very unlikely

to oppose any genuine move on the part of the people toward self-government.

He is very much out of touch with Peking and is known to be corresponding with Wu Pei-fu. Such correspondence as this between the military leaders who are known to favor reform is interpreted as a most hopeful sign in China.

(15) *Fukien.*—Li Hou-chin, the military governor of Fukien, is at the moment very much out of Peking's good graces. Chen Chiung-ming, the present civil governor of Kwangtung, formerly invaded Fukien, not only in a military sense but morally. The native Fukienese for the most part joined him or gave him covert support, while Li Hou-chi's northern troops were not numerous enough or sufficiently familiar with the country to oppose him. The result was a truce, followed by an understanding when Chen Chiung-ming returned to Canton that Li would not attack his rear.

Li's northern following in Fukien is now isolated. The Province is essentially a southern Province and its sympathies are with the south. In the north Li has many enemies because he was formerly a strong supporter of the Anfu clique. He can count on no material support from Peking, while, if he opposes the south, he is almost certain to be ejected. He is therefore leaning toward Canton. It is said that he would like to get out altogether. If he were to take flight, Fukien would declare for provincial autonomy and join the southern provincial federation to-morrow.

(16) *Kwangsi.*—Kwangsi, under the dictatorship of Lu Yung-ting and the tuchunship of Tan Hao-ming, is now an isolated Province, but acknowledges the authorities of Peking and surrounded by enemies on all sides. It would appear that the days of the present military rulers are numbered.

Their influence in Kwangtung was completely broken by Chen Chiung-ming, and the old Cantonese leaders are now urging a war of conquest in Kwangsi.

Since it is the announced policy of Chen Chiung-ming not to invade Kwangsi unless he is called upon by a fairly representative Kwangsi revolutionary organization to assist in throwing out the militarists, it is probable that there will be no war of conquest, but that Lu will be unseated by the natives—who are, here as elsewhere, cultivating the spirit of autonomy—with the possible help of Chen Chiung-ming on the one hand and of Tang Chi-yao on the other.

If Sun Yat-sen, who is intent upon building up a new southern state with himself as president, persuades the Cantonese soldiery to undertake an unsolicited invasion of Kwangsi, it is very possible that Lu Yung-ting may elicit the sympathy and support of some of his northern neighbors and make a stiff resistance.

If Chen Chiung-ming's saner councils prevail in Canton, however, Kwangsi will undoubtedly be lost to Peking within the next few months.

(17) *Kwangtung.*—The situation in Kwangtung is for the moment the most interesting in China. Without the influence of the Cantonese leaders, Sun Yat-sen, Tang Shao-yi, and Wu Ting-fang, it would be a thoroughly wholesome condition and would be a source of great inspiration to the reform parties in every other province. The great changes which have recently come about, involving the ejection of every political and military factor acknowledging the authority of either Peking or the Kwangsi dictator, Lu Yung-ting, was made possible by Gen. Chen Chiung-ming, a man whose record is clean, who is trusted by the Cantonese, and who makes an excellent impression upon foreigners.

Chen is an avowed enemy of Chinese militarists and champions the new ideas of provincial autonomy and local self-government. These theories are naturally distasteful to men of Sun Yat-sen's type, who have gone to Canton after it was made safe for them by Chen Chiung-ming to set up a new military government with themselves at the top.

Chen believes in cleaning up Canton, putting into effect there his democratic theories, and letting his neighbors alone unless they want help from him.

Sun Yat-sen wants to start a new revolution and conquer the Yangtze Valley. These ambitions are much at variance and the future of Kwangtung, as well as the south at large, depends upon which scheme is acted upon.

Chen Chiung-ming is somewhat in Sun Yat-sen's debt and is an old disciple, so can not gracefully deport him and his colleagues. If Sun's scheme is acted upon there will probably be civil war in the south, fostered by Peking and in a few months Sun and company will be back in the sanctuary of the French concession at Shanghai. If Chen Chiung-ming is allowed to run Kwangtung as he likes and calls for a federation of autonomous provinces to evolve a new government, it is probable that at least two-thirds of China will be leagued in such a federation within six months.

(18) *Yunnan.*—Yunnan, chiefly because of its geographical position has been virtually an independent state since 1915 and has been governed not at all badly by Tang Chi-yao since 1916. Tang is a young man, evidently a capable military commander, who is generally credited with liberal ideas and a sincere desire to help along administrative reforms in China. At many times he has entered into aggressive warfare with Szechuan north of him and with Kwangsi on his east. Politics in Kweichow Province he virtually controls. It

now seems to be his policy, however, to confine himself pretty much to Yunnan.

Recently on account of an armistice violation on the part of Szechuan he threatened another invasion of that Province and was offered an opportunity to ally himself with Liu-Tsun-hou, one of the Szechuanese leaders, but he seems to have thought better of it and is content for the movement to bring back into his own Province all of his scattered troops and to watch developments in Canton.

(19) *Szechuan and* (20) *Kweichow.*—Szechuan is in a state of change. The Province is enjoying peace under the joint control of Liu Tsun-hou and Tsiung Ko-wun, who have fought each other vigorously at times.

The provincial autonomy movement has a strong hold on the middle classes, and while the political leaders are now flirting with Peking it is more than likely that one or the other of them will go over to Canton and that there will be another feud.

(21) *Hunan.*—The situation in Hunan is so complex at this movement that no Chinese will venture an opinion upon it. The Hunanese are the most highly literate people in China, are very vain of their provincial reputation and have cultivated among themselves a strong provincial patriotism. For three years they have been repressed by northern armies, and under the tuchunship of Chang Ching-yao were abominably treated.

Last summer Wu Pei-fu's return from South Hunan to the north of China gave the Hunanese an opening to attack the northern invaders which they promptly seized. A purely native force of about 12,000, poorly equipped and trained, drove more than 50,000 northerners beyond the provincial boundaries. The entire populace and among all classes the motto "Hunan for the Hunanese" was adopted. This was the beginning of what is now known as the self-government movement. After Hunan had ejected the northerners, the Hunanese leaders settled down with strong popular support to create a local all-Hunanese Government.

For a time everything went smoothly and Hunan became the envy of all the other Provinces. Hunan's example created a desire everywhere for local self-government and for provincial autonomy. This has grown into one of the most serious and hopeful movements in China and is the source of endless worry to all the professional politicians and the military leaders in the south as well as the north.

Unfortunately the Hunanese experiment has not ended in perfect peace and bliss for the Hunan people. The volunteer army which ejected the northerners last summer was led by Tan Yen-kai, a great scholar with an enviable reputation as an official, and by Chao Heng-tis, a popular brigade commander. Tan Yen-kai was received by his fellow provincials with great acclaim and was almost forced into the

office of governor. Hao Heng-ti became commander in chief of the provincial forces and the two leaders seemed to work in perfect accord for a time.

Then, a few weeks ago, it was announced that Chao Heng-ti had driven Tan Yen-kai out of Hunan and that the provincial assembly has elected a police chief by the name of Lin to the office of civil governor. At the same time the Chinese papers carried many stories of demonstrations by student bolshevists, student socialists, and all manner of political fanatics.

Everyone outside of Hunan speculated upon the possible relation between the political changes reported and the apparent social unrest. Time has shown that there was no relation and the social unrest was nearly nonexistent if not wholly so. Tan Yen-kai was ejected because he belived that the safest way to preserve Hunan's much cherished autonomy was to enter into friendly relations with Peking. Chao Heng-ti violently disagreed, and he had the majority of the Hunanese behind him, so Tan had to go. There seems to be no deeper explanation. Hunan is now ready to recognize a federation of Provinces with an administrative center at Canton if Hunan's right to self-government is clearly recognized by the Cantonese leaders. The situation has been much complicated however by the appearance of Li Lieh-chun in South Hunan with a Yunnanese army headed for Canton.

In his passage Li has not conducted himself as though he were passing through a friendly country but has attacked Hunanese troops and looted cities. It is now reported in the paper that the Hunanese are calling upon the North for help against the South. This is improbable, but Li Lieh-chun's actions would seem to have cost Canton the friendship of the Hunanese. At the moment these few facts are all that is known of the situation.

(22) *Sinkiang.*—Very little of what is going on in this far distant territory is generally known. The Tuchun of Sinkiang, Gen. Yang Tsen-hsin, recently concluded a commercial treaty with soviet Russia much to the dismay and surprise of the Peking Government.

(A) *Mongolia.*—Conditions in Urga have been fully reported. Western Mongolia is in an open state of rebellion against Chinese authority. Trade in outer and eastern Mongolia is at a standstill and such American firms as Anderson & Meyer and the Mongolian Trade Co. are suffering severe losses. Inner Mongolia, comprising the districts of Alashan, Ordos, Silin Gol, and Chermin is a bandit-infested country in which many of Little Hsu's ex-army are still terrorizing the inhabitants. The stupid policy of the Chinese military which has resulted in the imprisonment of the Bogdo Khan (the Living God of Urga) and the oppression of Russians in Mongolia has resulted in the Chinese being despised and hated all through

Mongolia, where Lamaism and Russian influence still today remains a powerful influence.

(B) *Tibet.*—The best way to regard Tibet is as an empire of its own under the rule of Dalai Lama of Lhassa. Chinese and English influence in this inhospitable land to strangers amounts to little. The English representative of the Crown has recently arrived in Lhassa while the Dalai Lama's representative has arrived in Lanchow, Kansu, on his way to Peking.

JAPANESE INFLUENCE IN CHINA.

Japan's policy in China is a militaristic one pure and simple; it aims to keep China weak and this can best be achieved by promoting internal disorder; it also proposes to absorb China's resources.

The valuable rights and concessions obtained by the Japanese in China have been fully reported on, but the general ruthless and merciless methods practiced by the Japanese in obtaining them, has inspired and aroused a very strong anti-Japanese feeling throughout the nation amongst the merchants, the middle and lower classes; to fully realize this it is but necessary to travel away from the treaty ports.

Japan to-day has a strong influence with the Peking Government and is giving Chinese officialism a practical exhibition of the advantage of being pro-Japanese by carefully protecting within its own legation in Peking many of the prominent Anfuites for whose capture the Peking Government has offered rewards. The foreign office under the guidance of its antiforeign leader, W. W. Yen (graduate of the University of Virginia), makes the quarterly requests to the Japanese legation for their release in order to save face in the eyes of the Chinese people and a few misinformed foreigners.

There is every indication that Japan's aggressive policy in China is on the wane; still anyone who dares to prophesy in the East is either highly courageous or of the type who spends three months in the Far East and writes a large handsomely bound and expensive book covering all and every subject based of course on his own personal investigation.

Exactly what Japan's policy in southern China is no one can solve, unless it is that they are content to await developments of the present friction between Chen Chiung-ming and San Yat-sen and company.

The Chientao episode in Manchuria has served its purpose and the Korean-armed settlers in Manchuria are being driven out; also the atrocities practiced in this district toward Chinese and Koreans alike has shown the latter the power of the Japanese nation.

A student of the far eastern history will remember that prior to 1910 when Japan took over the Government of Korea, the Koreans were probably one of the most shiftless, good-for-nothing, and

useless nations in existence. Ten years of Japanese oppression and maltreatment has awakened a national feeling amongst the Koreans.

The same is now going in China—the abuse and bad treatment of the Chinese has created a bitter anti-Japanese feeling; it has resulted in the boycott and the student movement.

The best that could happen to China from a Chinese and altruistic point of view would be Japanese control of China with its attending evil of maltreatment and abuse, and one feels firmly convinced it would bring the Chinese to a real awakening of their rights and responsibilities to each other and the world at large.

The Japanese are not aware of the fact that the more they abuse and maltreat the Chinese the more they are arousing in that race a spirit of hatred and defiance which is gradually forming itself into a national spirit of awakening and patriotism.

STUDENT MOVEMENT.

The student movement is liable of misconception by foreigners, nonresidents of China. The student movement is a banding together of Chinese students with the slogan of "China for the Chinese"; this should not be interpreted as an antiforeign movement but as a guild of Chinese whose fundamental doctrine is to preserve Chinese sovereignty, rights, and resources, and naturally it has thus become an anti-Japanese association.

Fully 90 per cent of the student movement is prompted by students of Chinese education, not foreign education. A very significant fact which is not generally known but which statistics bear out as correct is that very few, if any, foreign-educated Chinese students ever become powerful and important personages in China. Many reasons can be advanced as an explanation of this deplorable fact, but nevertheless such is the truth. On the other hand, Chinese educated in Japan return to their native land with a bitter hatred for their tutors and a strong national feeling. There is no doubt but what the Chinese need foreign education and methods, but the place where they should be taught and trained is in China, and this idea is entertained by a great majority of disinterested foreigners.

CONCLUSION.

The above short synopsis of past events and the portraiture and delineation of present conditions in China clearly show that this nation is in a lamentable condition.

Still it must be born in mind that it is the Chinese themselves who have brought on this pitiable state of affairs in China. The more deplorable their state becomes the more the Chinese people will hate their officials who are responsible for their misery and the more they will band together with patriotic ideas, until finally a powerful and stable government will emanate from the present condition of clutter, chaos, and disorder.

There are to-day in China four men of power, and in analyzing the present situation and attempting to foresee future conditions it is vital to watch their movements.

These four men are Chang Tso-lin, governor of Manchuria; Wu Pei-fu, commander of Third Division; Chen Chiung-ming, civil governor of Kwangtung; and Tang Chi-yao, Tuchun of Yunnan. At present there is gradually spreading through China a movement for provincial autonomy and independence, which calls for the election of a provincial governor by the people of his Province.

This movement is gaining great strength in the south where it is being fostered by Chen Chiung-ming and there are those who believe to know and prophesy that this federation of Provinces will eventually become strong enough to place their own nominee in Peking as President of China.

THE SHIH TSING ARSENAL AT CANTON.

Source: Reliable.

28 February, 1921.

(14326.)

The press has of late been full of rumors and statements to the effect of the sale and delivery of arsenal machinery to the Kwangtung provincial governments (Sun Yat-sen) and Chen Chiung-ming by an English-American firm. The arms embargo has in the past been frequently violated by the Japanese in Manchuria and Fukien, by the Italians in Manchuria and Peking, and by the French in Yunnan and in every case has met with disapproval and condemnation by both the American and British legations in Peking and their respective nationals. For Americans and British to be now engaged in the same nefarious transaction with the so-called military government of China (rebel government at Kwangtung, Sun Yat-sen, and Chen Chiung-ming) is considered a rather disgraceful affair and one which the Peking Government is vehemently protesting.

The manner in which this contraband cargo was sold and safely delivered to Chen Chiung-ming is undoubtedly one of the cleverest and most unprincipled pieces of business transacted in many a day in China. To thoroughly understand the whole proceeding a brief sketch of the personalities and résumé of events connected with the deal is outlined below; *this office does not vouch for the complete accuracy of all statements made,* but the origin of the information is from many sources and *believed to be accurate.*

In 1916 an American named Davis arrived in Hongkong, acting as a traveling salesman for an American belting company. Davis did very well and after 18 months' residence in Hongkong decided to commercialize his knowledge of the Far East and start in business independently; also about this time he married his stenographer, a

smart, capable, and goodlooking Jewess. Davis's keen business methods resulted in his making a good deal of money—mostly in tin plate.

In 1918 Davis died and his clever wife, Paula Davis, immediately took over the management of the company and incorporated the same under British laws in the Crown colony of Hongkong.

Paula Davis is described as a good-looking Jewess (except for her nose), 32 years old, with a keen brain and the natural Hebraic instinct for close business.

Paula Davis incorporated the company in Hongkong under British laws with 2,025 shares—the value of each share is £100—of which 1,600 shares are held in her name. She then secured the services of an American named Tobin, formerly a traveling salesman for the Singer Sewing Machine Co. in south China; Tobin was given 100 shares with the understanding that he would secure for Davis & Co. the agency for the Singer Sewing Machine Co. in south China. Paula Davis then enlisted the services of an American named Pouric, who was also presented with 100 shares; Pouric has the reputation of being an adventurer and out to make money in the easiest and most convenient method. It being then necessary to give the firm some character, the services of an American named Lynott was obtained; Lynott was a Standard Oil man in Saigon and bears a fine reputation; he was also presented with 100 shares.

At this time the Kwangtung Province was under Peking control, represented by Lu Yung-ting, the Tuchun of the Province.

Lu Yung-ting being very anxious to obtain arsenal machinery, airplanes, etc., to fortify his military tenure of the Province, and being the collector of an $80,000,000 land tax of two rich Provinces, which of course he never remitted to Peking, was in the position to pay for the same. Lu Yung-ting sent Tom Gunn, a full-blooded Chinese, but an American citizen, to the United States to purchase war materials. Tom Gunn is said to have often boasted of his United States citizenship and his close friendship to the late American consul general of Hongkong, Mr. Anderson.

About the time of Tom Gunn's arrival in the United States, Tobin was representing Davis & Co. in New York. Tom Gunn is said to have approached Tobin for arsenal machinery and airplanes; the latter guaranteed to procure the airplanes, but as regards arsenal machinery instructed Tom Gunn to get in touch with Robinson & Cole Co., general traders in the Orient. Cole referred him to J. A. Rabbitt, who was the War Trade Board representative during the war in Japan and of course in a position to be well informed in regard to war materials. After the war, Rabbitt started his own business in Japan with head offices in New York, called J. A. Rabbitt Engineering Corporation and also another corporation named Keystone

Engineering Co. Rabbitt has the reputation of being a shrewd and keen business man, and when he appeared in China he was carefully watched by his business competitors. It is generally believed that Rabbitt obtained an arsenal plant from Toronto, Canada, which had been sold to the Canadian Government during the war by the American firm of Pratt & Whitney. It is now that the most remarkable part of the proceeding took place. Davis & Co. chartered an American ship named *Woodrichem* owned by the Kennebec Steamship Co. and placed aboard a cargo of machinery consigned to themselves, machinery consigned to the Kwangnam Engineering & Shipbuilding Co., of Hongkong (British-Chinese Corporation), and seaplanes consigned to Tom Gunn. It is true that from the manifest and invoices the machinery consigned to the Kwangnam Engineering & Shipbuilding Co. was not on the face of it "arsenal machinery," but it is also true that the same was not the type that a Tuchun might require for the legitimate and peaceful occupation of railroad work repair, automobile work, and other industrial plant repair.

As far as can be ascertained the *Woodrichem* cleared Norfolk on November 4, 1920, certainly with a suspicious cargo consigned to an American firm incorporated under British laws in Hongkong, to a Chinese-American about whom any cable inquiry would have brought out his affiliations with Lu Yung-ting and last to a Chinese-British corporation of Hongkong.

While the *Woodrichem* was making passage to Canton, J. A. Rabbitt appeared in Hongkong, and about this time the Lu-Yung-ting Government of Canton collapsed.

Davis & Co. played their cards well and immediately started an agent north and offered the arsenal and airplanes to Wu Pei-wu with the guarantee of safe delivery; the latter, through lack of funds, could not purchase the same. Previous to this, however, Davis & Co. had collected $700,000 Mexican from Lu Yung-ting as bargain money. During this time Davis & Co. also had themselves semiofficially represented in Canton by two smart-looking prostitutes who styled themselves Russian countesses and lavishly entertained the Chinese.

When the *Woodrichem* arrived in Canton, Paula Davis had arranged for the sale of this machinery and airplanes to the new Canton government for $2,000,000 gold; the old Canton government had already paid $700,000 Mexican to Davis & Co. Davis & Co. now also secured the legal advice of two very competent English lawyers, Wilkinson and Grist of Hongkong. The cargo upon arrival was generally known as arsenal machinery and in fact, Maj. Cassel, a retired British army officer engaged in business in Kwangtung, informed his consul to that effect.

The *Woodrichem* arrived in the Canton River and anchored at Whampoa which is the Chinese navy yard, about 15 miles below

Canton City; the ship started to unload her cargo without going through the necessary customs' inspection under the protection of the Chinese gunboats. Upon hearing this the American consul informed Capt. Howard, the master of the *Woodrichem* that he would refuse to give him the necessary clearance papers in case the cargo was not duly passed by the customs' officials.

The commissioner of the Chinese customs, a Britisher named Wilson, informed Chen Chiung-ming that he would not allow this cargo to be landed, whereupon Chen said he would seize the ship by force and land the cargo. The commanding officer of the U. S. S. *Hart* thereupon prepared to resist any attempt at seizure of this American vessel.

It should here be noted that the British, having obtained most valuable monopolistic contracts in Kwangtung from the preceding Lu Yung-ting government of Canton, were very anxious to prevent this delivery of arms to Chen Chiung-ming's government, which had already refused to recognize the validity of their contract with the previous Canton government.

In the meanwhile Wilson lost his nerve, and believing in Chen's threat to take over the customs, gave his consent to the delivery of the *Woodrichem's* cargo and accepted an I. O. U. from Chen for the duty of the cargo.

Wilson then attempted to shift the responsibility of his actions to the American counsul and informed him he would stop unloading of the cargo, if he, the American Consul, would give him a written statement to the effect that the landing of the cargo was a violation of the arms agreement.

The American consul had no law behind him which would warrant his stopping the delivery of a cargo which, from the manifest, was clearly neither arms, munitions, or explosives; also such an act would have aroused a very bitter anti-American feeling among the Cantonese, who are loud in their admiration for Chen and condemnation of Lu Yung-ting.

The landing of this cargo certainly does not tend to increase American prestige among the other occidental powers, but from an American business point of view in Kwangtung, it is certainly a proper proceeding in that it strengthens the new Cantonese government, which is apparently pro-American. Upon the safe delivery of this cargo, the master of the *Woodrichem* was presented with a bonus of $10,000 gold by Davis & Co.

The arsenal is now in the course of erection by Rabbitt, who is personally supervising the job, and assisted by another American named Brown. The contract indicates that the Rabbitt Engineering Co. are acting as consulting engineers for the Cantonese govern-

ment; it is impossible to legally prove that the Rabbitt & Co. are erecting this arsenal.

The British consul general in Canton states, that although Davis & Co. is a British incorporated firm, he only recognizes them as such in Hongkong, and if they operate outside of Hongkong they are, from his standpoint, an American firm.

This whole proceeding has left a dirty taste in everyone's mouth, and the blame rests with those American officials who issued the export license and gave the ship her clearance papers from Norfolk. It also has brought out the dire necessity of laws empowering United States diplomatic and consular officers to control the questionable actions of their nationals in such countries as China, where the rights of extraterritoriality removes the foreigner beyond the pale of Chinese jurisdiction. It is the opinion of this office, however, that the American legation might verify the alleged statement made by British authorities in Canton to the effect that Davis & Co. is an American firm in Canton, and in such case inform the latter that they come under American consular jurisdiction outside of Hongkong, and that the American consul in Canton will hereafter be authorized to prevent any repetition of such business deals as the sale of arsenal machinery in China, since such acts seriously compromise the reputation of the United States Government among the other occidental powers in China.

Whatever excuses may be offered for the sale of the above-mentioned supplies, these powers will continue to regard the whole affair, from the granting of an export license to the final delivery of the cargo, as a serious breach of America's good faith, pledged by the American minister in Peking, March 4, 1919, when the arms embargo agreement was signed.

CONDITIONS IN HARBIN, 17 JANUARY, 1921.

Source: Reliable.

(12680.)

28 February, 1921.

It is reported that there are 50,000 troops of the Red Army at Chita, or what the bolsheviks call the People's Revolutionary Army, consisting of volunteers, former members of the so-called "partisan," or guerilla bands, and recently mobilized men of the younger classes. Two soviet divisions are expected in Chita soon, which are intended to take the place of those of the "partisan" troops in whom it is felt to be impossible to place great reliance.

The troops of the Red Army are stationed both in Chita itself and in the surrounding country districts, in order to prevent any disorders that may take place owing to the inordinate demands upon the peasants for grain.

The discipline among the troops is harsh. The men are well armed, but badly clothed and fed, which would seem to justify the reason given by the bolsheviks for sending so many troops into the Amur and Primorsky Provinces, namely the lack of food in Transbaikalia. The Red Army soldiers, according to this report, receive a ration of either a pound of bread without meat, or half a pound of meat without bread. Many of them beg for food in the outskirts of the city. They do not, however, commit robberies, for such deeds are punished by shooting on the spot. The city is well defended against crime.

All the villages and districts of Transbaikalia have been appointed a definite amount of food to supply to the city. This amounts to 12 puds (36 English pounds) of grain per head, which is too much.

The communists manage, however, to restrain the discontent of the peasants both by the presence of troops everywhere and by their educational or propaganda work—lectures and theatrical performances in the villages. This attracts the young peasants, who do not support the discontent of the elders.

In the Verkhne Undinsk district the discontent of the peasants is reported to be general, and in the region of Bichura troubles have broken out, but were put down by armed force.

After the departure of the Kappel troops for the Primorsky district, a secret soviet organization was formed at Jalainor, according to the Russky Golos. A recidivist criminal, formerly a policeman, was placed at the head of it (named Vasilchenko).

A troop has also been organized for defense. This is headed by a contractor named Prometeff, also of a doubtful reputation.

So far these organizations have had no effect on the work in the mines. The Chinese military authorities called attention to this, and Gen. Chan Ku-i issued strict orders to prohibit communistic agitation.

Ataman Semenoff, who is now at Mukden (January 14) sent urgent orders to all the atamans of the Cossack troops at Harbin and Grodokovo to Mukden, where several of them have already arrived. This refers to officers of the former Semenoff army and includes the atamans of the Siberian, Yenisee, and other Cossack troops.

The grain export trade is undergoing a severe crisis. There are practically no shipments to the west. During December the shipments passing through Harbin to the west totaled 22,001 puds of flour.

The export to the south has been reduced approximately 40 per cent.

At Anda station the arrivals of grain shipments in the beginning of January were from 30 to 50 per cent less than those of the latter part of December, due, it is said, entirely to the lessened demand for grain.

The greater part of the grain is shipped along the South Manchuria line by cart. Prices of commodities in Harbin are steadily going down.

Japanese Troops to Harbin.

Large numbers of Japanese troops are reported to be moving from Changchun north.

It is thought here that the bolsheviks are preparing to make war on Japan. There are many indications of this, chief among them being the movement of bolshevik troops to the east, their concentration at Habarovsk, on the pretext that there is more food there, and the bringing of soviet troops from Russia into Siberia. Troops are arriving frequently from the west at Chita, and from there they are reported to be moving gradually and taking up strategic positions.

The very energetic efforts they have been making to win over at least a part of the Kappel troops and to disintegrate the rest are also an indication.

Reports from Russia indicate that the war party in Russia is having things its own way and that the bolsheviks are preparing for operations on a large scale. They are endeavoring gradually to become independent of the military leaders who formerly served under the Czar's government and to this end are training men for a military career, imbuing them at the same time with their political and social ideals.

It is stated that Latvia will be invaded and crushed and that another campaign to the west and against Poland will be undertaken.

Conversation with men arriving from Siberia and with men who very frequently meet such arrivals, indicates that the frequent reports of uprisings in Siberia and in the eastern part of European Russia are in no wise unfounded. The uprisings are sporadic and, by virtue of the enormous distances, have no connection with one another. But the feeling of discontent is quite general. The Czecho-Slovak consul states that even German ex-war prisoners and Derbians have taken part in the uprisings. The latter probably owing to the extreme difficulty of traveling by rail through Siberia. It takes two months, approximately, to get from western Siberia to Harbin. Many of those coming through are imprisoned at various points at the whim of the local authorities, held in prison a month or two and then allowed to proceed farther.

The uprisings in eastern Russia, the Urals, and the Volga districts seem to be very serious and according to accounts the bolsheviks are unable to cope with them. Many of the workmen of the Ural mining and manufacturing districts are said to be taking part.

The peasants everywhere oppose the constant requisitions, even when well supplied with food themselves. At the beginning of the revolution the peasants were extremely well off as regards food and as regards money, while the population of the cities was practically

starving. Shingareff, the minister of finances, explained then situation at that time and stated that, as the peasants could not purchase the things they needed with their money—hardware, etc.,—they did not care to sell their produce, since they had more money than they wanted.

The result was that the peasants were living as they had never lived in their lives before, while the inhabitants of the city had no food.

It was only a few days after this interview that Shingareff was murdered under particularly horrible circumstances. Like so many other things, he had worked for the overthrow of the old régime and for the uplifting and the improvement of the lot of the people.

ANALYSIS OF THE SITUATION AT SHANGHAI IN THE EVENT OF HOSTILITIES.

Source: Reliable.

12 January, 1921.

(14337.)

In submitting an analysis of the situation that would exist on the Yangtze River and in Nimrod Sound, in the event of hostilities, the initial study, is of necessity, one of generalities.

Lack of definite information as to (1) mission, (2) enemy forces, (3) our forces, while susceptible of assumption, may, if erroneously assumed, vitiate the (4) decision. In general terms, it will be assumed that our purpose is to destroy the enemy's fleet; and, as a correlate thereto, that such destruction will be undertaken in areas other than those herein designated, as the Yangtze Valley, Nimrod Sound. In short, then, the analysis submitted is that of the conditions and activities that may take place in areas posterior to the enemy's battle front.

I. China—Racial Homogeny, Strength of Government, Loyalty of People.

As a preliminary to an understanding of the attitude of the Chinese people and the present so-called central government, cognizance must be taken of the general conditions existing within the territorial limits of the Republic of China, at this time.

Unfortunately, China, as a whole, is both politically and racially in a disjunctive condition. The northern Provinces are in opposition to the so-called southern Provinces. The advocates of democracy are aligned against the old monarchistic followers. Province stands against Province. Anfu members are opposed to Chihli members. Militarists seek advancement, increased wealth, and power at the expense and to the detriment of the civil population. Corruption and malfeasance in office are alleged to be the rule, rather than the exception.

The strength of the central government, and its ability to arouse and control national sentiment is practically nil. Its directive force is negative. National armies and national naval forces in the commonly accepted sense of the words, do not exist.

Our libraries are replete with books, descriptive of the Chinese people; more frequently than not their summations are in error. Linguistically, the Chinese people may be subdivided into at least a dozen separate and distinct branches; the so-called mandarin dialect being but a slender binding tie.

Personally, I am of the opinion that the Chinese can be led, can be welded into a compact and serious potentiality if leaders can be found in whom the masses have respect. The lack of leaders possessing necessary vision, strength, and caliber, has been productive of confusion. The great mass of the people to-day are in no sense followers; in truth, they may well be likened to a military herd, harassed by local military leaders, seeking self advancement, or, by their exterior agencies, desirous of governmental gain.

There can be no gainsaying the fact that the Chinese people are undergoing civic changes, and that these changes have taken on increased acceleration within the last few years. Fundamentally, these changes are for individual betterment, and even now, through a multitude of minor organizations, are seeking group betterment. It is inevitable that the group organizations will seek amalgamation, and, in time, be productive of national betterment. Jealousy, a lack of confidence, and an unawakened consciousness of their full strength, leaves China as a nation, a negative in the reckonings of to-day.

The gradual disappearance of a specific antiforeign feeling is possibly of significance. A year to a year and a half ago the so-called Japanese boycott was actively enforced. At the present time it is rarely if ever mentioned. Then local Japanese boats seldom carried Chinese; passengers to-day they are active competitors with both the Chinese and the English lines. Japanese goods were seized and publicly destroyed; to-day they may be purchased without question, even in Chinese stores. Rice in enormous quantities has been exported to Japan, with an occasional embargo made necessary in order to provide food for a famished district. Even of recent date the military governor of Hupeh Province has made recommendation that a there-existing rice embargo be lifted in order that he may, through the medium of an export tax, obtain funds for the payment of his Chinese troops. The "student body," strongly anti-Japanese in all its tendencies, was an organization meriting consideration a year ago; to-day, through an overestimate of its strength and powers, it has fallen into disrepute. The exportation of iron ore from the Yangtze Valley to Japan has gone on uninterruptedly.

Of a more general or comprehensive antiforeign feeling I think it may safely be said that there is none at the present time. In September there were vague rumors of a revival of the Boxer Society, but these reports gained no great circulation nor could they be confirmed.

During the summer of 1920 considerable disorder existed in the middle and upper Yangtze Valley, and as a result thereof one American missionary was killed in the vicinity of Yochow, in the Province of Hunan. The towns of Changlin, Yochow, Wanhsien, Chungking, and Ichang, and possibly other places of less importance have been looted; but in every instance these actions have been traceable to unpaid soldiery or to so-called robber bands. At Ichang in December, 1920, a systematic looting took place, seemingly prearranged and under local military control; in this instance certain foreign godowns were entered and one or two Japanese storehouses destroyed by fire.

Of friendly foreign feelings we as a Nation are seemingly held as the favorable race. Whether this is wholly complimentary to us remains to be seen. In the language of many Chinese officials our actions are above suspicion; our general attitude that of generous liberality; and spending by the American tourist inclines toward extravagance. In interior towns and upon the part of the great rural population I very much doubt if the individual Chinese differentiate one white race from another.

In speaking of strength of government and the loyalty of the people my viewpoint has been from the Province toward the central government, and in my conclusions lead to a belief in the weakness of the Peking Government and the absence upon the part of the people of any self-sacrificing loyalty or patriotic feeling thereunto. Military and civil governors throughout the Provinces have repeatedly ignored mandates emanating from Peking. Peking, on the other hand, has so frequently failed to provide the funds for administration and the maintenance of the military within the several provinces. Presumedly no central government making pretense to the exercise of governmental control would have permitted the debacle enacted by Gen. Chang's so-called "Northern Army" in its precipitous retreat through the Province of Hunan this summer. Assuredly no strong central government would permit a foreign nation to erect and maintain, without governmental consent and despite governmental protest, a high-powered radio station and a military barracks, wherein are quartered at least a thousand foreign soldiers—all this within the municipal limits of Hankow and under the guise and pretext of protection for a Japanese hospital unit.

II. Chinese Neutrality in the Event of Hostilities.

Chinese neutrality in the stricter sense of the word and under the contingencies herein contemplated, would, I am inclined to believe, be impracticable of accomplishment. Its maintenance could be brought about only through the insistence of other neutral nations and their possible intimidation of one of the offending belligerent parties.

That there will be a tendency to disregard the neutrality of China is almost a foregone conclusion. Its nonobservance during the Japanese-Russian War and the indifference attaching to it in the more recent Siberian situation are matters of well-authenticated record.

The unneutrality of China, if it may be so regarded, would, through national weakness, be both active and passive. Active in that the chance for gain through intercourse with a belligerent would be too great a temptation to be resisted upon the part of guild or individual, knowing as they would the improbability of punishment. Passive, in that a belligerent power confronted with the necessities or advantages of the occasion, would be fully aware of the weakness of the Chinese Government and the corruptibility of certain of its people.

The neutrality of China, if it is to be a positive factor, will come not through the action of the Chinese, but as the resultant of insistence upon the part of other nonbelligerent nations.

China will not by force of arms resist the violation of her neutrality.

It is within the purview of this paragraph to invite attention to what may be termed "racial tendency toward affiliation"; eastern races arrayed against the whites, while improbable, is nevertheless susceptible of accomplishment.

III. Chinese Belligerency in the Event of Hostilities.

The consequence of any belligerent act or tendency of the Chinese may, it is thought at the present time, be disregarded. Aroused to national action, and under the control of capable and efficient leaders, they could in time be welded into a stupendous army—but what will arouse them? Seemingly, the whole desire is but to be permitted to live, even though the conditions of existence be intolerable.

IV. Foreign Residents in China and Their Possible Influence in the Event of Hostilities.

The foreigner in China, irrespective of his nationality, may be included in three general classes: (*a*) Commercial, (*b*) missionary, (*c*) tourist.

According to the latest public information, said to be from official Chinese sources, the number of foreign companies and stores doing

business in China, and that of the different nationals living in the Republic, are as follows:

Nationality.	Number of firms.	Number of residents.
American	314	6,660
British	646	13,234
French	171	4,409
Japanese	4,878	171,485
Portuguese	93	2,290
Russian	1,780	148,170

with others of lesser numbers and minor importance.

At the present time British commercial influence dominates, and is ably abetted by the presence of British subjects in the maritime customs, railway service, postal service, salt gabel, municipal councils, and similar organizations. American commercial influence is, however, rapidly increasing, and may in time readily attain to position of importance.

Of missionary influences I very frankly admit a hesitancy in expressing an opinion. The American missionary is intensely loyal and has shown a broadening tendency toward cordial cooperation. From casual conversation with foreigners resident in the Yangtze Valley, I gather that they are of the opinion that the French Catholic Mission are the more intimately associated with the Chinese, and that their members are the better posted as to Chinese thought and tendencies, and that in consequence their control is the stronger, their converts more dependable.

The presence of tourists exercises no influence in national affairs. In China, as elsewhere, the American tourist is welcome, and may venture where he will without fear of annoyance.

The presence of foreign residents in China in the event of hostilities is of importance, primarily as sources of information and as influence upon Chinese officials. I am of the opinion that the liaison and influence of Japan is far superior to that of America at the present time. In order of standing I would classify them as follows: (*a*) Japan, (*b*) Great Britain, (*c*) America.

Japanese superiority may be attributed to better organization, familiarity with the language, greater number of residents, and a more aggressive attitude, coupled with an ever present sense of duty and obligation to his home government. The presence of Japanese prostitutes in practically all treaty ports merits consideration.

The British residents exhibit strong tendencies toward mutual association and enjoy the advantages of longer residency, identification with well-known and long-established eastern firms, and position in certain governmental branches.

The American resident, until quite recently, has been aggressively working out his individual problems in a more or less independent manner. The tendency now is toward "getting together," and the establishment of American chambers of commerce and American clubs will be of manifest advantage to us as a Nation. In the Standard Oil Co. of New York and certain of our other large commercial organizations the groundwork exists whereon could be built an efficient liaison service.

Our general inability to speak or understand either the Japanese or Chinese language is a source of weakness, and may readily prove embarrassing. It constitutes a serious handicap even at the present time.

V. Shanghai, Its Status.

To all intents and purposes Shanghai is commonly regarded and accepted as an international city. Historically, this status had its inception in the British treaty of Nanking and the subsequent grant of a British concession on the Whangpoo. Closely following the grant to the British Government, a still larger grant or concession was made by the Chinese to the French Government.

The original concessional grants—the British, so I understand, bears no official signature—precluded the domicile of Chinese subjects within the concessional limits. At the time of the Taiping rebellion Chinese sought asylum within the concession and were permitted to reside therein, to the profit of the foreign landowners, thus marking the beginning of the present large Chinese population.

It is significant and worthy of particular note to make mention of the fact that there is no officially recognized or accepted American concession within the municipal limits of the city of Shanghai. An attempt was made shortly after the granting of the French concession by Americans then resident in Shanghai to obtain a grant for an American concession, but this was not favored or supported in our official circles, and the matter went by default. Neither the American Congress nor the State Department has, so far as I can ascertain, ever made claim to recognition of concessional rights in the port of Shanghai.

Even the most casual investigation as to the sources of authority of the so-called municipal council of Shanghai—i. e., the active administrative municipal government—exclusive of that existing in the French concession, leads to rather surprising and doubtful sources.

Briefly speaking, the authority was granted, in a none too clearly defined manner by the Chinese Government, to the foreign ministers in Peking; and by them delegated, subject to review and approval, to the local consular body; and in turn by them delegated, subject again to review and approval, to a so-called municipal council elected by the ratepayers.

At the present time the British members are in large majority, there having been but one American and one Japanese elected. In addition to the regular members and in response to the recent aggressive demands upon the part of the Chinese ratepayers, a Chinese advisory committee was given recognition.

Agitation has from time to time and of recent date been started by the Chinese for the withdrawal of all foreign concession rights, but as yet has attained no particular strength or importance. It is mentioned merely as a matter of record and a remote possibility.

The Japanese colony in Shanghai is of increasing growth and importance. Their places of residence, commercial firms, and shipping interests are well compacted.

Communication and transportation between Shanghai and Japan is of simple and frequent accomplishment. As a matter of possible interest it may be mentioned that the wall, but recently removed from around the native city of Shanghai, was erected as a means of protection against early Japanese pirates.

VI. Shanghai—Its Past Immunity.

So far as can be ascertained, Shanghai has enjoyed full immunity and maintained neutrality during: (1) Franco-Chinese War, 1885; (2) Chinese-Japanese War; (3) Boxer uprising; (4) Japanese-Russian War; (5) World War.

At the outbreak of the Chinese-Japanese War, the Chinese authorities notified their consuls of their purpose to close the entrance to the port. The foreign Governments at the request of their consular representatives insisted upon a recognition of the port's neutrality.

The recognition by our Government (Mr. Frelinghuysen to Mr. Young, Jan. 22, 1884) of the right of China to blockade Shanghai "for necessary defense," was held nevertheless to be unjustifiable, because Japan had formally undertaken to consider Shanghai and the approaches thereto as beyond the sphere of her warlike operations.

During the year 1904–5, both Japanese and Russian armed ships were simultaneously present in the anchorages off Woosung and Shanghai, but neither belligerent committed any unneutral act—this in contrast to Japan's actions in cutting out a Russian destroyer that had sought refuge in the port of Chefoo.

In 1913, during the Chinese insurrection, the foreign consuls and the municipal council, in joint session, issued a proclamation which was in part as follows:

> The foreign settlement of Shanghai has been primarily established for the purpose of trade. * * * Now, therefore, the foreign consuls and the municipal council thereby declare that neither the settlement nor the northern suburb shall be used as a base for warlike operations or as a focus of intrigue. * * * Those who are concerned as leaders in the present operations, of whatever party, whether military chiefs or civil officials, are hereby required to remove beyond the settlement and northern suburb under the penalty of arrest.

VII. Shanghai—Continuing Neutrality.

I think that it may be reasonably assumed that, based upon the above precedents and actively safeguarded by the interests of numerous foreign nations, the neutrality and future immunity from hostile demonstrations of the foreign settlement of Shanghai will be respected and preserved.

VIII. Conclusions.

In the event of hostilities as herein contemplated, the resultant situation may be considered as subdivided.

(1) Conditions that will exist from declaration of hostilities until such time as we may gain control of the sea.

(2) Conditions that will exist after we have gained control of the sea, or so impaired enemy control as to permit of reasonable safety of operation in the so-called posterior areas.

The conditions and in particular the initial actions of our opponent can only be inferred, but it seems a probability amounting almost to a certainty that the mainland of China will be seized. The advantages of such action are at once manifest and will far outweigh any other consideration, international protest notwithstanding. The action could well be predicated upon "necessity of preserving national existence."

We are prone to consider Japan as an island; geographically this may be quite correct, but as a political entity a much broader conception must exist. Japan in event of hostilities may well mean all of eastern Asia. Siberia, Korea, Formosa, Tsingtau are footholds that exist. The islands of Japan are but an outer barrier—the Continent of Asia, the depot of supplies.

Under these conditions, the Yangtze Valley and Nimrod Sound fall automatically under enemy influence and control; Shanghai and Hongkong become places of refuge for such of our nationals as might escape from interior settlements thereto.

This condition would maintain until such time as action with enemy fleet would permit of our armed vessels remaining in waters between Japan proper and the Asiatic Continent, and during this period procurement of supplies from China would be wholly undependable.

With enemy fleet disposed of either in whole or in part, supplies would become procurable from the Continent of Asia.

No attempt has been made to describe anchorages, possible bases, or routes of supply, and communication in the waters to westward of Japan. These could not well exist until after enemy's fleet has been met and destroyed, and it is hardly possible that this meeting will be in these restricted waters.

Detailed intelligence data is in course of preparation and will be submitted when compiled.

(Strictly secret.)

I. ABSTRACT FROM THE WAR DIARY OF THE "U-117," UK SQUADRON, FROM JULY 11, 1918, TO SEPTEMBER 22, 1918.

Commander: Lieut. Dröscher.

(To 18922 A IV.)

BERLIN, *December 19, 1918.*

Task.—Placing mines near Barnegat Lighthouse, Fenwick and Winter Quarter Lightship, Wimble Shoals light buoys. The carrying on of warfare on merchant shipping on the east coast of North America.

Outward route.—Eastern route.

Return route.—Eastern route.

Results.—Four steamers (amongst them 2 tank steamers) 15 sailing vessels (and fishing vessels), furthermore 1 steamer, according to observation by a mine. Altogether, 26,063 tons.

Result of shooting.—Nine torpedoes, 4 T = 44.4 per cent.

Events of the Undertaking.

July 17–20.—Cruise through the blockade zone.

July 20.—Fired at a steamer; in vain, it escaped.

July 26.—The same (on account of seaway) steamer *Baron Napier.*

August 1.—Small war vessel with screened lights. Torpedo shot appeared to fall short.

August 8.—During attack on convoy the torpedo stuck in the tube; worked itself out later.

August 9.—Sunk 8 American sailing vessels: *Aleda May, Progress, Reliance, William H. Starbuck, Earl and Nettie, Cruiser, Mary Sennet, Kate L. Palmer.*

August 12.—Unknown steamer (estimated at 300 tons) sunk by a torpedo (*Sommerstad*).

August 13.—Tank steamer (estimated at 7,000 tons) sunk by a torpedo (*Henry R. Kellock*).

Placed mines according to Op. order near Barnegat Lighthouse.

August 14.—Sailing vessel *Dorothy Barrett*; flames broke out on the vessel as a result of the gunfire. Was attacked with bombs by aviators.

August 15.—Placed mines near Fenwick Lightship and to the south of Winter Quarter Lightship. Sank American sailing vessel *Madrugada* by gunfire.

August 16.—Placed mines near Wimble Shoals light buoy. Between spells sank tank steamer of about 2,500 tons by a torpedo, another tank steamer burning in the vicinity (as a result of hitting a mine). Because of lack of oil decided to return.

August 17.—Norwegian barque *Nordhao* sunk by explosives, was attacked by a fast vessel under cover of a sailing vessel—U-boat trap—submerged.

August 20.—Artillery battle with Italian steamer *Ansoldo I* in vain.

August 21.—Swedish steamer *Algeria* halted by gunfire. Dismissed.

August 23.—Met empty lifeboat of the Norwegian steamer *San Jose.*

August 24.—English steamer *Branca* sunk (by explosives).

August 26.—American sailing vessel *Rusch* sunk by explosives

August 27.—Unknown steamer (about 2,500 tons) sunk by torpedo.

August 30.—English sailing vessels *Elsie Porter* and *Potentate* sunk by explosives.

September 2.—Steamer *Aleigne* pursued without result (artillery).

September 5.—Steamer *War Rance* torpedo attack (no detonation) and pursuit without result.

September 12.—Taking oil on board from the *U–140.*

September 22.—Arrival in Kiel.

(Letter telegram.)

Opinion of the Commander of the U-Boat Forces on the War Diary of "U-117"—Commander: Lieut. Dröscher—for the Period of July 11, 1918, to September 22, 1918.

(1) Sunk:		
4 steamers, 7 sailing vessels, 8 sailing vessels with motors (fishing vessels)	tons	23,367
In addition, one steamer, which was observed to have been sunk as a result of contact with a mine	tons	2,700
Torpedoes:		
Carried		20
Fired		9
Hits		4
Ammunition:		
Carried, 300 15 cm.; 324 8.8 cm. Gr.		
Fired, 233 15 cm.; 41 8.8 cm. Gr.		
Length of trip	days	74
The vessel had a list during	do	35

(2) The opinion of the first U flotilla is approved as a whole. With regard to details the following comments are made:

(3) The commander states in his "experiences" that the main task was the placing of mines. This is not correct. The main task was the sinking of vessels. Touch should therefore have been maintained with the convoy train of August 2 and August 8, at least as long as the ammunition lasted. There would probably have been an opportunity to place the mines anyway.

(4) When attacking a train of convoyed ships all the tubes ought to have been trained and two torpedoes should have been fired at

the last ship. The fact that the torpedo stuck in the tube was probably due to a serious service mistake.

(5) The fact that the double shots were not fired on August 21 and September 5 can not be justified.

(6) For the rest the understanding was carried out with a clever exploitation of the opportunities for attack. The interrupting of the mine placing on August 16 which showing eagerness for action and which led to the destroying of an American vessel deserves recognition. The mines were placed at much-frequented spots and the effect was not lacking.

(7) As a result of the prolonged stay in the O region, all the oil was consumed. This might easily have been very serious, but fortunately the boat upon meeting *U–140* was able to replenish its supply of oil.

(8) The vessel sunk on August 12 was probably the Norwegian ship *Sommerstad*, 3,875 tons—S Fr. Pr. S. 795; the one sunk on August 13, was the American tank steamer *Fr. R. Kellog*, 7,125 tons—S Fr. Pr. S 930 (it is valued at 6.3 million marks); the one sunk on August 16, the American steamer *Westbridge*, Fr. Pr. S. 820. Worth mentioning is the fact that the *Sommerstad* was armed.

(9) The many experiences and the stimulating matter will be utilized.

I. Abstract from the War Diary of the U-117, U Cruiser Squadron from July 11 to September 22, 1918. Commander: Lieut. Dröscher.

Zone of activity.—Route going and coming: The eastern route and north of Shetland Islands.

Task.—(1) War on merchant shipping. (*a*) Between New York and Cape Hatteras. (*b*) In the vicinity of Halifax on the return journey.

(2) The placing of mines near Barnegat Inlet, abreast of and to the south of the mouth of the Delaware and north of Cape Hatteras.

Results.—Four steamers, seven sailing vessels, eight motor fishing vessels, 23,367 tons; one steamer as a result of mine contact observed, 2,700 tons.

Result of shooting.—Out of nine torpedoes, four hits, 44.4 per cent.

Events of the undertaking.—On July 15, while traveling submerged in the North Sea, the boat suddenly sank to a depth of 60 meters. It was later ascertained that the rapid air extractors of several of the auxiliary bunkers had been crushed. On July 20, submerged attack on unknown steamer, which, from a distance of 1,000 meters, drove down on the boat. Collision was avoided by submerging. The steamer was thereupon attacked by gunfire. After a pursuit of two hours, however, the steamer disappeared in the rain squalls. On July 23 speed was reduced to 7 nautical miles in order to save oil.

On July 26 artillery attack on English steamer *Baron Napier*, armed with two guns. The latter returned the fire with vigor. The fight had to be abandoned on account of the seaway in which the boat was plowing heavily and also on account of the greater speed of the steamer.

On August 8, at 1 a. m., a torpedo was fired at and missed a vessel with three smokestacks and all lights screened—either a small cruiser or destroyer. The projectile probably overshot the mark. It was ascertained meanwhile that the consumption of fuel was greater than the calculations in this connection had given the right to assume would be the case. As up to about 55° W., south, 40° N., no traffic was met, the course was altered on August 6 to a course running north of the latitude. On August 8, at about 40° N., 61° 2′ W., a convoy train of about 22 ships was sighted. Among them a number of tank steamers traveling east. Boat only succeeded in firing one torpedo at the last ship. But the torpedo stuck in the tube. Torpedo finally worked out of the tube of its own accord. The B. d. U. (commander of the U forces) is of the opinion that this was caused by a grave service error. On August 10, at about 40° 15′ N., 65° 30′ W., the following motor fishing vessels were sunk: *Aleda May*, *Progress*, *Reliance*, *William Starbuck*, *Earl and Nettie*, *Cruiser*, *Mary Sennett*, and *Katie L. Palmer*, 600 tons altogether. They were sunk by gunfire and explosives. On August 12, at 39° 55′ N., 72° 25′ W., an unknown steamer traveling alone (about 3,000 tons) was sunk by torpedo during a submerged attack. The steamer had a gun in the stern and was probably the Norwegian steamer *Sommerstad* (3,875 tons). The lifeboats of the steamer were lost sight of in the fog. On August 13, at 39° 55′ N., 73° 54′ W., an unknown armed tank steamer (about 7,000 tons), with cargo, was sunk by a torpedo. On the same day mines were placed in the vicinity of Barnegat Light Buoy. On August 14, at 38° 44′ N., 74° 28.5′ W., a torpedo attack was made on an American five-masted schooner with gaff topsail, *Dorothy Barett* (2,088 tons); cargo, coal. The torpedo missed the ship. The vessel was thereupon set on fire by artillery and sunk. Within sight of Five Fathom Bank Lightship, *U–117* was attacked by aviators. Nine bombs were dropped within 50 minutes No damage was done. On August 15 two mine obstructions were laid, one south of Fenwick Lightship and one south of Winter Quarter Lightship. At 37° 46.5′ N., 74° 57′ W., an American four-masted schooner *Madrugada* (1,613 tons), cargo probably oil or coal, was set on fire and sunk by artillery.

On August 16, a steamer with three masts and strange superstructure accompanied by two smaller vessels was sighted. It was probably a U-boat trap. On the same day in the afternoon the mine laying near Wimble Shoals was begun. A cargo-laden tank

steamer was sighted and for this reason mine laying was discontinued for the time being and the tank steamer was sunk by a torpedo at 35° 35′ N., 75° 21′ W. Thereupon the rest of the mines were laid. Two hours later, in addition to the torpedo tank steamer which was still burning a second tank steamer was observed which was also in flames. It probably ran upon one of the mines which had been previously laid by the *U–117*. The plan of carrying on warfare on merchant shipping after completing the task of mine laying could not be executed because of the small quantity of fuel. As the possibility of further fuel losses could not be disregarded the return journey was begun. On August 17, the Norwegian bark *Nordhao* (2,846 tons) with a cargo of linseed for New York was sunk by explosives. While sinking the sailing vessel a three-masted schooner accompanied by a smaller fast vessel was sighted. This was regarded as a U-boat trap. On August 19, an attack upon an unknown steamer was omitted because the friction couplings of the starboard engine failed to work. On August 20, fight with an Italian steamer, *Ansaldo Primo*. This vessel was armed with three guns. The stern gun was put out of commission by a hit. Further pursuit of the steamer had to be abandoned for lack of fuel. On August 21, miss was registered for a torpedo fired at an unknown steamer. The torpedo deviated twice from its course. On the same day the Swedish vessel *Algoria*, with ballast from Gothenburg to New York was halted but not sunk as justification therefor in accordance with Pr. O. was lacking. On August 22, torpedo attack on steamer with four smokestacks and two masts. Steamer changed its course 6 points to starboard 10 minutes before the shot was intended. On August 23, met empty drifting boat belonging to the Norwegian steamer *San Jose*. On August 24, the English schooner *Bianca* was sunk by explosives at 43° 22′ N., 60° 59′ W. Approaching Halifax or carrying on merchant warfare in that vicinity was not considered because of further considerable fuel losses.

On August 26, the American fishing vessel *Rush* (120 tons) was sunk by explosives at 44° 32′ N., 58° 20′ W. On August 27, an unknowned armed steamer (2,500 tons) was sunk by a torpedo at 45° 21′ N., 54° 50′ W. In the fog the lifeboats were lost sight of. On August 30, at 46° 28′ N., 50° W., the English fishing vessel *Elsie Porter* (about 140 tons) at 46° 31′ N., and at 49° 50′ W., the English fishing vessel *Potentate* (about 140 tons) were both sunk by explosives. Both vessels were laden with fish. On September 2, a steamer was attacked by gunfire; the pursuit of the ship had to be given up at the end of three-fourths of an hour on account of lack of oil. On Sept. 5, a torpedo attack was made on the steamer *War Rance*, a miss was registered. The projectile probably overshot the mark. In spite of the small quantity of fuel the steamer was pursued for about 3 hours

at reserve speed without diminishing the distance sufficiently to allow a resumption of the artillery. An agreement with regard to taking over oil from *U–140* was reached and was executed on September 12 and 13, in all 19 cbm. were taken on board. Before running the boat into Kiel the fuel supply, which had again been entirely consumed, was once more supplemented alongside the *Hannover* in the vicinity of the Sund.

Experiences.

(A) *Events of the undertaking.*—The weather was favorable during the entire trip, although the contrary winds, which occurred quite often, diminished the amount of the day's run very considerably. For the first lap of the journey outward the orders of the U-K squadron were followed. From this point on the course to the destination was laid out on the basis of the traffic chart during peace and upon the data concerning merchant traffic during the war while taking the traffic chart into consideration as much as possible. Wireless messages received later were given all possible consideration. The homeward course was mapped out, in part, by the orders in O. Lack of oil was the decisive factor. During the last lap of the journey home the course was set first according to the *U–140* and then in accordance with the mine signals. Little traffic was met with on the trip across the ocean either way. It did not increase until the American coast was approached. Convoyed traffic with slight protection seems only to go eastward and appears to travel in latitude 40° 20′ N. about as far up as Nantucket Lightship. All single ships to and from America and along the coast were unguarded. Single vessels very numerous. Guard in general light. A few U-boat chasers, one torpedo-boat destroyer, one torpedo boat, and a number of aviators were sighted. Aviators always came as soon as hullo signals were given by steamers or lightships.

The considerable amount of traffic gave prospect of good success. The moderate success in proportion to the length of the trip is a result of the short period of activity in the O zone because of lack of fuel. This was the decisive factor in all the decisions. The boat could only stay at the coast from August 10 to 16, and during this time there were two days of fog. The time was barely sufficient to carry out the principal task—mine laying. It was unfortunately not possible to make a protracted stay at the coast. Wireless communication with *U–156* was not sought, as the latter was operating in the Gulf of Maine. It had been agreed with the U-cruiser squadron that *U–140* was only to be communicated with in cases of extreme necessity. When starting on the homeward journey the wireless communication attempted was not successful.

The lights on the American coast were burning correctly. Seamarks and lightships were set out correctly.

(B) *General information.*—The boat proved very satisfactory on the whole. The deficiencies which were noted can be overcome.

Seaworthiness good. Motion agreeable; boat does not ship much water during heavy sea and wind. Stability sufficient, but the boat heels over very easily. This heeling is variable and is disadvantageous during artillery fights. A reason for the same which is free from all objection has not been found. Better draining away of the water from the pockets formed by the regulating tanks, which are drawn up high, would probably help some.

The damages on the upper deck and on the outside plating are insignificant.

The inadequate action of the Lohmann couplings must positively be done away with, as, in their present condition, they can not be used. A change in the accumulator suction connection is desirable. It was not possible to make the charge higher than 9,500 ampere hours on account of the irregular suction; for this reason the efficiency of the battery was too low. One mine was omitted on account of the installation of a tank for distilled water.

The storage for the provisions sufficed only partially. The provision space with lock and key, which was built into the mine room, was in keeping with the requirements; nevertheless some of the provisions were lying about loose in the mine room. With a systematic arrangement it should be possible to avoid this. About 13 tons of provisions were taken in all. Two of the torpedo containers in the upper deck were filled with provisions, which kept very well. In each container there were three boxes of suitable dimensions packed with preserves. This arrangement was for the purpose of better preservation and accessibility. There was no trouble in getting out the preserves. The filling of the torpedo containers with provisions is recommended in order to avoid having them lie around. Those lying around would amount to about 4 tons.

Health was good on the whole. Short medical report inclosed.

According to the traffic met with, there are excellent prospects for successful warfare on merchant shipping on the American coast. The laying of mines will also be very effective. However a stay of at least two weeks is necessary to obtain results which would be in proportion to the length of the trip. The short stay of the *U-117* was necessitated by the loss of about 30 cbm. of oil, and about 22 cbm. by the omission of diving tank II as auxiliary bunker. From this 10 cbm. must be deducted for the extra fuel taken in the intermediary mine tanks, leaving a total loss of 40 cbm. This amount would be sufficient, even after the necessary reserves had been deducted, for a stay of two weeks. But even this supply of fuel appears to me to be not quite sufficient for carrying out the enterprise in bad weather,

especially as the speed values in actual practice are considerably lower than shown by the calculations of the U. A. K.

For economical purposes an engine was tried out at standard speed and found to average 5.5 nautical miles per hour. The U. A. K. gave 7 miles, and the reserved speed as 12.5 to 13. Similarly the figures for the consumption of oil in actual practice are higher than those given by the U. A. K. On an average 2.6 cbm. of oil were used during a day's run of 120 nautical miles.

(C) *Artillery.—U–117* was equipped with one 15-centimeter S/K. L. 45 and one 8.8-centimeter S. K. L. 35 gun. The 8.8-centimeter gun was used only for halting and sinking.

The 15-centimeter gun with U-boat and torpedo-boat mounting proved very satisfactory. There were no breakdowns of any consequence during the entire trip. Only when traveling submerged for a considerable time during bad weather did the operated firing mechanism fail to act during two or three rounds. After that the discharge functioned perfectly.

All the firing suffered very much from the continuous heeling of the boat, so that some of the hits could not be seen by the observer because they were too far to the side. It was not possible to fire at the rolling period of the vessel because of the irregular heeling of the boat to either side. Even in the calmest weather the boat had a list of 7° to 8°. All blowing out with compressed air and with blowers was useless because within 5 to 7 minutes the boat would heel over again to one side.

The gun stand was located comparatively low so that during a heavy swell (5 or more) it was not possible to see the desired object through the telescope. The telescopes were often blurred by the water shipped.

The ammunition supply was good. The tackle for the elevators was carried strung to the tower in readiness. Thus when the artillery alarm sounded, it was possible to get ammunition from the locker to the guns very quickly, so that very little shooting was done with ammunition kept in readiness. The volleys were fired at a speed of one every three-fourths of a minute.

Very disadvantageous was the circumstance that only the hatch of the tower could be opened in weather even slightly bad, so that the gun and ammunition crews (in all about 20 men) had to pass through it when the boat emerged. A raising of the living space or the engine hatch is desirable.

The buggeschütz (bow gun) was used only once, when firing at a sailing vessel. The buggeschütz was not in order, and there was no time to fix it. The needle of the range finder continued to deviate until a hit was made, but the sight sword was not yet at the duplicate triangle mark.

(D) *Torpedo.*—In the armament of the lower deck the fact that all the pipe connections were of iron was unpleasantly noticeable. The rust forming there settles between the valves so that in spite of their being often removed they become leaky again and again.

One torpedo stuck in the tube. It seems that the discharge pressure of 4.5 kilograms is not sufficient during full speed when submerged. When the speed was decreased the torpedo worked itself out of the tube. As, when the U-boat was being tried out, the same thing occurred it is not a question of the initiating of a new tube.

The armament of the upper deck proved satisfactory.

The torpedoes were well preserved and also functioned well. The light film of rust occasioned by sweating was easily removable. Only one of the containers was leaky, allowing sea water to enter and causing the torpedo to rust badly. The torpedoes were carried in the upper deck containers without air, oil, or alcohol. Any oil left in the engine or in the steering mechanism was removed before placing the torpedoes in the containers by forcing air through them. This was done to prevent them from becoming gummed up. As a protection against rust the torpedo was greased on the outside with cylinder oil.

It was found possible to reduce the period of unpreparedness for diving when shipping much water at sea to 30 minutes. Transportation was only possible when the sea was smooth.

(E) *Wireless experiences.*—Good results were obtained with wireless reception. Nauen could be picked up regularly undamped with N. A. antenna amplifiers and superimposers up to a distance of 3,400 nautical miles. Even at greater distances Nauen could still be heard but could not be picked up on account of constant interruptions in the air. On the American coast there were, in addition, interruptions by an undamped station which transmitted with the same wave during the times reserved on the program for Nauen.

Hullo signals were picked up by the lightships and were passed on with the steamer's own wave. Warnings against U-boats were given out blindly at irregular intervals by the lightships.

The damped 1-kilowatt Lorenzo transmitter worked well. No attempts were made to attain very wide ranges. Communication with *U-140* was possible at a distance of 300 nautical miles with N. A antenna and low intensity. To the south of the new English blockade zone, *Rugia* was communicated with without difficulty.

Communication with the intermediary in the Baltic, from south of Anholt, was very difficult. The intermediary answered after *U–140* had attracted his attention.

Telegrams were twice given out blindly with the tube transmitter A confirmation within the time set in the program was lacking both

times. During the outward trip the report on bearings was given 800 nautical miles from Norddeich with a copper mast antenna. As the wave meter provided for the trip did not respond to the tube transmitter it was not possible to control the wave length. It is therefore possible that in consequence of incorrect wave lengths, the wireless was not picked up, although the wave length was varied as much as was possible. A serviceable wave meter is an absolute necessity. The mine report was also given out blindly with a mast steel wire antenna at a distance of 300 nautical miles.

(F) *Report on technical matters.*—Separate inclosure for the commander of the U-forces (B. d. U.).

(G) *Medical report.*—Separate inclosure for the commander of the U-forces.

DROSCHER,
Lieutenant, Commander of the Vessel.

Résumé Concerning General Consumption.

Number of nautical miles covered:
At the surface, 9,046.
Submerged, 90.
Total, 9,136.

Fuel consumption (in liters):
(*a*) Total, 248,000.
(*b*) For charging, can not be ascertained on account of special charging instructions for the battery.

Delivered by what firm—that is, what kind of oil, K. W. Kiel, gamma=0.87.

Consumption of lubricating oil (in liters), 11,000.

Delivered by what firm—that is, what kind of oil and what is its specific weight, K. W. Kiel gamma=not known.

Ratio (lubricating oil to fuel consumption), 1 : 22.5.

Oil engines were operating:
(*a*) In all—
Starboard, 37 days, 20 hours.
Port, 33 days, 7 hours.
(*b*) With reserve speed—
Starboard, 50 hours.
Port, 50 hours.
(*c*) For charging, on account of special treatment of the battery it was only used very little.

Ampere-hours:
(*a*) Not charged, 136,736.
(*b*) Charged, 150,595.

Fresh water, drinking water, 14,000 total consumption; 7,500 was obtained by evaporation.

Ammunition used:
(*a*) Torpedoes, 9 torpedoes G.6AV.
(*b*) Artillery, 159, 15 c. m.; 48, 8.8 c. m.
(*c*) Explosive charges, 11 explosive charges.
(*d*) Incendiary bombs, none.
(*e*) Illuminating cartridges B 17, 4.

46376—21——5

War Diary of U-117, from Date of Placing in Service until June 7, 1918.

Date and hour.	Place, wind, weather, seaway, lighting, clarity of the atmosphere, moonlight, etc.	Events.
1918.		
Mar. 28:		
12 noon.....	Hamburg, Vulcan wharves.	Placed the boat in service in command of Lieut. Droscher and placing of the boat under the orders of the U. A. K.
Mar. 28 to Apr. 2.....	.....do.....	Taking on of equipment: exercises in packing.
Apr. 2:		
12 to 6.....	Elbe.....	Cruising exercises on the Elbe.
Apr. 3:		
4.30 p. m.....	.....	Went down the Elbe to Brunnsbuttel.
9.30 p. m.....	Emperor William's Canal.	Moored alongside the Hessen.
Apr. 4:		
5.40 a. m.....	.....do.....	Ran eastward through the canal.
12.20 p. m.....	Holtenau.....	Cast off.
1.15 p. m.....	Blucher Bridge.	Moored alongside the Acheron.
4.20 p. m.....	Imperial Wharf, Kiel.	Cast off and went to Imperial Wharf (Suspension Bridge) for the taking on of fuel (oil), lubricating oil, and materials.
Apr. 5.....	.....	Taking on of ammunition.
Apr. 6.....	.....	Taking on of fuel (oil) and lubricating oil.
Apr. 7.....	.....	
Apr. 8:		
10.45 a. m.....	Imperial Wharf.	Cast off; went alongside the Acheron.
2 p. m.....	Kiel Harbor.....	Cast off and maneuvered with the engine in the harbor; time experiment in Heikendorf Bay.
7.45 p. m.....	.....do.....	Moored alongside the Acheron.
Apr. 9:		
9 a. m.....	.....do.....	Cast off; ran out.
10.05 a. m.....	.....do.....	Anchored in Wander Bay on account of fog.
2.05 p. m.....	.....do.....	Weighed anchor.
3.10 p. m.....	.....do.....	Test diving in Heikendorf Bay.
4.20 p. m.....	.....do.....	Moored in the Imperial Wharf.
Apr. 10:		
7.40 a. m.....	.....do.....	Cast off, ran out mile runs at the surface for measuring the vessel's speed in the vicinity of Bocknies Eck.
6.45 p. m.....	.....do.....	Moored at the Blücher Bridge.
Apr. 11:		
8 a. m.....	.....do.....	Cast off, ran out to Bocknies Eck for the purpose of making mile runs for measuring the vessel's speed, ran in.
5 p. m.....	.....do.....	Moored at the Blücher Bridge.
Apr. 12:		
7.45 a. m.....	.....do.....	Alongside of the Condor for the taking over of mine.
10.45 a. m.....	.....do.....	Cast off, ran out, stopped and lay near Frankfort (village) on account of fog, ran in.
3.30 p. m.....	.....do.....	Moored alongside the Acheron.
Apr. 13:		
8.15 a. m.....	.....do.....	Cast off, went to Heikendorf Bay for mine laying.
10.30 a. m.....	Heikendorf Bay	Anchored.
11.05 a. m.....	.....do.....	Weighed anchor, lost anchor in consequence of chain breaking.
3.30 p. m.....	.....	Moored in the Imperial Wharf.
Apr. 15:		
7 45 a. m.....	Kiel Harbor...	Cast off, went alongside Roon for taking on torpedoes.
7.10 p. m.....	.....do.....	Cast off, time experiment in Heikendorf Bay.
5.25 p. m.....	.....do.....	Moored to Blücher Bridge.

Date and hour.	Place, wind, weather, seaway, lighting, clarity of the atmosphere, moonlight, etc.	Events.
1918.		
Apr. 16:		
8.10 a. m.	Kiel Harbor	Cast off, ran out to bulk fire ships for the purpose of testing the torpedo tubes.
4.40 p. m.	.....	Moored in the Imperial Wharf.
Apr. 18:		
11.35 a. m.	Kiel Harbor	Cast off, went alongside the Condor for the purpose of taking over mines.
4.45 p. m.	.....do.....	Moored to Blücher Bridge.
Apr. 19:		
7.10 a. m.	.....do.....	Cast off, ran out to Eckernforder Bay for mine laying.
5.55 p. m.	.....	Moored to Blücher Bridge.
Apr. 20:		
1.40 p. m.	.....	Cast off, docked at Dock XIII of the Imperial Wharf for the purpose of changing crews.
Apr. 22:		
11.15 a. m.	Kiel Harbor	Left dock, ran out, tried out guns near Gabelsflach, ran in.
7 p. m.	.....do.....	Moored alongside Acheron.
Apr. 23:		
7.30 a. m.	Kiel Bay	Cast off, ran out for mine laying at Eckernforde, subsequently mile runs for the purpose of measuring vessel's speed. After that commencement of 24-hour cruise.
Apr. 24:		
5.40 p. m.	Alsensund	Moored alongside of D–10 (anchored).
Apr. 25:		
6.30 a. m.	Kleiner Belt (Little Belt).	Cast off, went to Taksensand for depth diving, lay on the bottom, ran in to Kiel.
4.35 p. m.	Kiel Harbor	Moored to the Blücher Bridge.
Apr. 26:		
8.10 a. m.	.....	Cast off, went to Bulk with the inspector of the X boat organization, submerged, ran in.
12.45 p. m.	.....	Moored in Imperial Wharf.
Apr. 27	Imperial Wharf Kiel.	Cleared out equipment and material and placed it on the Mecklenburg.
Apr. 28	.....	
Apr. 29	.....	Commencement of final repairs.
May 6	.....	To Dock X for enlargement of depth rudder.
May 24:		
10.40 a. m.	Kiel Bay	Left dock, cast off, test diving in Heikendorf Bay, maneuvered with E engine, ran in.
7.20 p. m.	.....	Moored in Imperial Wharf.
May 25:		
11.30	Kiel Bay	Cast off, test diving in Heikendorf Bay, good. Retesting of leaks of the hatch planned for the oil engine room. Leaks were noted on 24th of the month.
3.50 p. m.	.....do.....	Moored to the Blücher Bridge.
May 26	.....do.....	Overloaded the battery.
May 27:		
2.20 p. m.	Kiel Harbor	Cast off, ran out for the purpose of making mile runs with the E engine in order to measure speed of vessel, ran in alongside of Condor for the delivery of three mines, and went into the wharf for continuation of final repairs.
May 27 to May 31	.....	Continuation of final repairs.

(Original signature) DRÖSCHER.

The test period of the boat can be divided into the following periods:

(1) March 28 to April 7: Placing in service, training, completion of the equipment in Kiel.
(2) April 8 to April 27: Tests, including mine practice, propeller experiments and depth diving at Taxsensand.
(3) April 28 to May 25: Final repairs, protracted by the enlargement of the depth rudder and equipping of the boat for the undertaking with U cruiser squadron.
(4) May 25 to May 31: Final tests with new depth rudders, electric tests, final overhauling for leakages, etc.

In view of this being the first boat of the series, the tests went off very well. The comparatively long period for repairs at the wharf was by reason of the adjustment of the boat for its special task and the enlargement of the depth rudders. The work executed on the boat at the wharf deserves only praise. The personnel were also capable and fully equal to their tasks.

Artillery Experiences of the U-117.—Cruise Covering Period from July 11 to Sept. 22 1918. Commander: Lieut. Dröscher.

Question.	Answer.
1. Construction of gun and mounting. No. of gun.	15 cm. U-boat and torpedo boat Kl 45 in 15 cm. U-boat and torpedo boat carriage C/16.
2. Observations concerning substructure of the gun.	None.
3. Was an acceleration or strengthening of the substructure ordered or executed? (Reason for not being executed.)	No.
4. Observations concerning the hoisting mechanism.	None.
5. Were repairs executed during the cruise for No. 4? What repairs, when?	No.
6. Observations concerning the lateral training mechanism.	None.
7. Were repairs executed during the cruise on No. 6? What repairs, when?	No.
8. Was the submerging ever executed with unlashed gun? When?	No.
9. Did the guns jam at any time? In what manner and how was it overcome?	No.
10. Were there any breakdowns in connection with the firing? What were they and how were they overcome?	During a long period of submerged travel the discharge mechanism with knee operation failed to work for two or three rounds. After that it worked perfectly.
11. Were there any breakdowns in connection with the gun sights and telescopic sights? What were they and how were they overcome?	No.
12. Did the telescopic sights become leaky? At what depth?	No.
13. Were there any breakdowns as a result of freezing?	No.

Artillery Experiences of the U 117—Continued.

Question.	Answer.
14. Were any of the ammunition cases leaky? (State whether filled at the depot or on board or whether they were opened and closed again.)	
(*a*) Gun cartridge cases.....	2. Shell cases. By changing the rubber waterproof packing the fault was overcome.
(*b*) Shell cases.....	One 8.8 cartridge case was quite defective (leaked).
15. Were there any blind shells or gun cartridges?	One round of the 8.8. It came from the leaky case.
16. What was the maximum temperature in the ammunition storage chambers? What was the temperature of the air and the water at the same time?	24° in the ammunition chamber. Water 26°. Air 27°.
17. Was the ammunition supply from the interior of the boat adequate?	Yes.
18. What breakdowns occurred in connection with the E measuring apparatus?	Log could not be synchronized.
19. Did installations for giving the artillery commands work perfectly or were there any breakdowns connected therewith?	Yes.
20. (*a*) Was the ammunition lashed in a perfectly satisfactory and seaworthy manner?	(*a*) Yes.
(*b*) Was there anything in connection with the storage of the same that was objectionable?	(*b*) The front edge of the 15 cm. storage for the ammunition that is kept in readiness is too narrow.

"V 117," COMMANDER: LIEUT. DRÖSCHER.

Date and hour.	Place, wind, weather, seaway, illumination, clarity of the atmosphere, moonlight, etc.	Events.
1918.		
Sept. 23.....	Kiel Imperial Docks.	Taking on board of outfit.
Sept. 24.....	.....do.....	Taking on board of outfit and material.
11.20 p. m...	.....	Casting off. Started on voyage through the canal to the west.
Sept. 25:		
7.30 a. m....	Brumsbüttelkoog.	Moored alongside of Hessen. Delivering up of torpedoes and ammunition.
Sept. 26.....	.....do.....	Exchanging outfit.
Sept. 27.....	.....do.....	Duty.
Sept. 28:		
1.20.....	.....do.....	Delivering up the guns. Cast off. Ran into locks for voyage to Hamburg.
6.30.....	Hamburg.....	Moored at the Vulkan Docks.
Sept. 29.....	Hamburg.....	Unpacked the boat.
Sept. 30.....	.....	Completed on Sept. 30, 1918.

(Signature and stamp).

Artillery Expenses of the U 117—Continued.

Date and hour.	Kind of vessel; approximate size; if possible, the strength of the convoy.	Approximate course.	Approximate bearings of the vessel.	Remarks.
July 20, 12 m	Steamer	250°	56° 9′ N., 18° 56′ W.	Gun fight without success.
July 26, 3.30 a. m	do	250°	44° 28′ N., 34° 8′ W.	Do.
Aug. 2, 1.40 p. m	do	270°	40° 14′ N., 49° 7′ W.	No attack.
Aug. 2, 3 p. m	Convoy train	Eastward.	40° 14′ N., 49° 7′ W.	Attack broken off.
Aug. 8, 7.30 a. m	Convoy train, 22 vessels	Eastward.	40° 7′ N., 61° 45′ W.	Failure of torpedo.
Aug. 10, 8.30 a. m	Several sailing vessels	./.	40° 30′ N	8 sailing vessels, each 75 tons, sunk by gunfire.
Aug. 12, 10 a. m	Steamer, about 3,000 tons	300°	39° 53′ N., 72° 25′ W.	Sunk by torpedo.
Aug. 13, 4.50 p. m	Steamer, about 7,000 tons	350°	39° 55′ N., 73° 54′ W.	Do.
Aug. 14, 12 m	Sailing vessel, 2,088 tons	./.	38° 44′ N., 74° 28.5′ W.	Set on fire by artillery.
Aug. 15, 7.45 a. m	Sailing vessel, 1,613 tons	./.	37° 30′ N., 74° 38′ W.	Sunk by gunfire.
Aug. 16, 3.30 p. m	Tank steamer, about 2,500 tons.	0°	35° 35′ N., 75° 21′ W.	Sunk by torpedo.
Aug. 17, 12.30 p. m	Sailing vessel, 2,846 tons	./.	36° 20′ N., 73° 36′ W.	Sunk by explosive.
Aug. 19, 8.50 a. m	Steamer	250°	38° 12′ N., 71° 22′ W.	Attack abandoned.
Aug. 20, 6.30 a. m	do	240°	38° 18′ N., 71° 16′ W.	Artillery fight.
Aug. 31, 6.15 a. m	Steamer with 2 smoke-stacks.	260°	39° 59′ N., 69° 10′ W.	No possibility of attack.
Aug. 21, 9 a. m	Steamer	260°	39° 59′ N., 69° 10′ W.	Attack missed.
Aug. 22, 9 a. m	Steamer with 4 smoke-stacks.	250°	40° 15′ N., 66° 55′ W.	Attack abandoned.
Aug. 24, 5.30 p. m	Sailing vessel, 408 tons	./.	43° 22′ N., 60° 59′ W.	Sunk by explosives.
Aug. 26, 6.45 a. m	Sailing vessel, 120 tons	./.	44° 32′ N., 58° 20′ W.	Do.
Aug. 27, 3.30 a. m	Steamer, about 2,500 tons	240°	45° 21′ N., 54° 50′ W.	Sunk by torpedo.
Aug. 30, 2.10 p. m	Sailing vessel, 140 tons	./.	46° 28′ N., 50° 00′ W.	Sunk by explosives.
Aug. 30, 5.30 p. m	do	./.	46° 35′ N., 49° 50′ W.	Do.
Sept. 2, 1 p. m	Steamer	300°	49° 49′ N., 41° 58′ W.	Artillery fight.
Sept. 5, 8.10 a. m	do	245°	51° 09′ N., 34° 04′ W.	Attack missed.

Number of Hits of U-117; Cruise Covering Period from July 11, to Sept. 5, 1918. Commander: Lieut. Droscher.

Kind of gun and construction of mounting: 15 cm. U-Boat and torpedo boat KL 45 C/16.

Engagement No	2.
Object fired at and result	Italian steamer La Saldo Primo, escaped.
Distance	110 to 128 kilometers.
Number of volleys fired	109.
Number of hits as far as can be ascertained.	One full hit and one well-placed time and percussion fuze.
Lateral position	The shots lay at times very far out to the side. Observation apparatus could not be used.
Motion of boat	The boat had a continuous list of up to 7°. As soon as blowing out was accomplished boat would heel over to the other side.
Approximate diagram of fight	

Number of Hits of U 117—Continued.

Engagement No	1.
Object fired at and result	English steamer Baron Napier, escaped.
Distance	90 to 120 kilometers.
Number of volleys fired	45.
Number of hits (as far as can be ascertained).	None.
Lateral position	The position for shooting was poor at times.
Motion of boat	Boat ploughed heavily and heeled over considerably (seaway 6 to 7 between equally and high).

	At the end of 1½ hours.	At the end of 1 hour.	Beginning.
Approximate diagram of fight	U 117	U 117	U Boat.

Mine Sketch, U-117.

OBSTRUCTION I, PLACED ON AUG. 13, 1918.

Nine mines, distance apart about 900 meters, total length, 4 nautical miles.

Position.

From $\begin{cases}\rho=39^\circ\ 41.2'\ \text{N.}\\ \eta=73^\circ\ 54.4'\ \text{W.}\end{cases}$ to $\begin{cases}\rho=39^\circ\ 42.7'\ \text{N.}\\ \eta=73^\circ\ 59.2'\ \text{W.}\end{cases}$

OBSTRUCTION II, PLACED ON AUG. 15, 1918.

Seven mines, distance apart about 900 meters, total length, 4 nautical miles.

Position.

From $\begin{cases}\rho=38^\circ\ 15.6'\ \text{N.}\\ \eta=74^\circ\ 42.5'\ \text{W.}\end{cases}$ to $\begin{cases}\rho=38^\circ\ 16.3'\ \text{N.}\\ \eta=74^\circ\ 46'\ \text{W.}\end{cases}$

OBSTRUCTION III, PLACED ON AUG. 15, 1918.

Eight mines, distance apart about 650 meters, total length, 2.5 nautical miles.

Position.

From $\begin{cases}\rho=37^\circ\ 44.7'\ \text{N.}\\ \eta=74^\circ\ 54.3'\ \text{W.}\end{cases}$ to $\begin{cases}\rho=37^\circ\ 44.7'\ \text{N.}\\ \eta=74^\circ\ 57'\ \text{W.}\end{cases}$

OBSTRUCTION IV, PLACED ON AUG. 16, 1918.

Nine mines, distance apart about 500 meters, total length, 2.2 nautical miles.

Position.

From $\begin{cases}\rho=35^\circ\ 36'\ \text{N.}\\ \eta=75^\circ\ 18.1'\ \text{W.}\end{cases}$ to $\begin{cases}\rho=35^\circ\ 36'\ \text{N.}\\ \eta=75^\circ\ 20.6'\ \text{W.}\end{cases}$

List of Ships Sunk by U-117, Commander, Lieut. Dröschen.

Undertaking, July 12 to Sept. 21, 1918.

Serial No.—	Date.	Place, latitude, longitude or square.	Name of the vessel.	Nationality.	Size in gross registered tonnage.	Kind of vessel.	Cargo.	Means employed for sinking.
1	Aug. 10	Within the circumference of about 10 nautical miles from 40° 15′ N., 65° 30′ W.	Aleda May	American	[1] 600	Fishing vessels with schooner tackle and auxiliary engines.	.....	Explosives and artillery.
2	Aug. 10		Progress					
3	Aug. 10		Reliance					
4	Aug. 10		William H. Starbuck.					
5	Aug. 10		Earl and Nettie					
6	Aug. 10		Cruiser					
7	Aug. 10		Mary Jennett					
8	Aug. 10		Katie L. Palmer					
9	Aug. 12	39° 52′ N., 72° 25′ W.	Unknown steamer	Unknown	[2] 3,000	Steamer	Probably ballast.	Torpedo.
10	Aug. 13	39° 55′ N., 73° 54′ W.	do	do	[2] 7,000	Tank steamer	do	Do.
11	Aug. 14	38° 44′ N., 74° 28.5′ W.	Dorothy Barrett	American	2,088	5-masted schooner with gaff topsail.	Coal	Artillery.
12	Aug. 15	37° 46.5′ N., 74° 57′ W.	Madrugada	do	1,613	4-masted schooner	Probably oil	Do.
13	Aug. 16	35° 35′ N., 75° 21′ W.	Unknown	Unknown	[2] 2,500	Tank steamer	do	Torpedo.
14	Aug. 17	36° 20′ N., 73° 36′ W.	Nordhav	Norwegian	2,846	4-masted bark	Linseed	2 charges of explosives.
15	Aug. 24	43° 22′ N., 60° 59′ W.	Bianca	English	408	3-masted schooner	Tobacco	Explosives.
16	Aug. 26	44° 32′ N., 58° 20′ W.	Rush	American	[2] 120	Fishing vessel	.....	Do.
17	Aug. 27	45° 21′ N., 54° 50′ W.	Unknown	Unknown	[2] 2,500	Steamer	(?)	Torpedo.
18	Aug. 30	46° 28′ N., 50° 0′ W.	Elsie Porter	English	140	Fishing vessel	Fish	Explosives.
19	Aug. 30	46° 35′ N., 49° 50′ W.	Potentate	do	[2] 140	do	do	Do.

[1] 8 by 75.

[2] About.

Torpedo Report of the U-117, Commander, Lieut. Dröschen.

For the cruise covering the period of July 11 to Sept. 24, 1918.

Serial No.—	Date.	Kind of torpedo.	No. of torpedo.	Submerged.		At the surface.		Objective.	Remarks about missfires, misses, seaway, etc.
				Hit.	Miss.	Hit.	Miss.		
	1918.								
1	July 31	G 6 A V+	11470	.....	.....	.....	Yes....	Apparently destroyer with 3 smokestacks.	The mark appeared to be overshot.
2	Aug. 8	...do.....	12731	.....	Yes....	.....	.....	Steamer of a convoy train.....	Torpedo stuck in tube; expulsion force to bow.
3	Aug. 13	...do.....	12736	Yes....	.....	.....	.....	American steamer 3,000 tons...	
4	Aug. 13	...do.....	13705	Yes....	.....	.....	.....	Tank steamer 7,000 tons.....	
5	Aug. 14	...do.....	13379	.....	Yes....	.....	.....	Schooner with 5 masts.....	Overshot the mark.
6	Aug. 16	...do.....	13387	Yes....	.....	.....	.....	American steamer 2,500 tons..	
7	Aug. 21	...do.....	12799	.....	Yes....	.....	.....	Italian steamer.....	Torpedo made a curve.
8	Aug. 27	...do.....	12646	Yes....	.....	.....	.....	American steamer 2,500 tons..	
9	Sept. 5	...do.....	11431	.....	Yes....	.....	.....	English steamer (standard type).	Overshot the mark (certainty).

Torpedo Report of the U–117—Continued.

For the cruise covering the period of July 11 to Sept. 24, 1918—Continued.

Serial No.	Date.	Torpedo.		Depth adjusted for torpedo (meters).	Data concerning wind and seaway.	Estimated size of adversary (tons).	Estimated speed of adversary (nautical miles).	Estimated distance (meters).	Number of seconds counted until detonation.
		Construction.	No.						
	1918.								
1	July 31	G. 6 6.7..	11470	3	Wind, E. 2.....	800–1,000	12	600	.....
2	Aug. 8	...do.....	12731	3	.....do.....	3,000	10	1,200	.....
3	Aug. 13	...do.....	12736	2	Calm.....	3,000	10	450	20
4	...do.....	...do.....	13705	3	Wind, S. 3.....	7,000	9	400	19
5	Aug. 14	...do.....	13379	2	Wind, E. 2–3.....	2,088	.....	350	.....
6	Aug. 16	...do.....	13387	3	Wind, NE. 2–3....	2,500	8	350	17
7	Aug. 21	...do.....	12799	3	Wind, NNW. 3–4.	2,500	9	300	.....
8	Aug. 27	...do.....	12646	2	Wind, ENE. 3....	2,500	9	600	36
9	Sept. 5	...do.....	11431	2	Wind, NE. 2.....	3,000	6	300	.....

Serial No.	Date.	The shot fell—					If observed after the shot: The adversary's change of course, the course of the torpedo.	What is the explanation regarding the miss?	With or without distinguishing features.
		↓ Or ↑	At what angle of incidence.	With the sea, against the sea, or across the sea.	Was the boat turning or on a straight course?	How many degrees down by the bow, down by the stern, or on even keel?			
	1918.								
1	July 31	↗↗	75°	Across	Straight	Top-heavy at the surface.	No change; course of torpedo good.	Probably overshot the mark.	Without.
2	Aug. 8	↙↗	80°	do	do	do	Course of torpedo good.	Torpedo stuck in the tube.	Do.
3	Aug. 13	↗↗	80°		do	do	do		Do.
4	do	↙↗	80°	Across	do	do	do		Do.
5	Aug. 14		75°	With	do	do	do	Overshot	Do.
6	Aug. 16	→↗	80°	Down by the stern.	do	do	do		Do.
7	Aug. 21	↙↗	80°	Across	do	do	Torpedo curved in its course.	Torpedo curved in its course.	Do.
8	Aug. 27	↙↗	80°	do	do	do	Torpedo course good		Do.
9	Sept. 5	→↗	100°	With	do	do	do	Overshot	Do.

The Naval War, 1914–1918, North Sea (from the German Naval Staff History).

(Continued.)

The first installment appeared in the January 15 Bulletin.

In compliance with the proposal of the Chief of the First U-flotilla the small cruisers *Hamburg* and *Stettin* together with the *U–20* and *U–21* at once went out to damage the reported forces by U-boat attacks. Nothing more of the enemy was seen, however.

The squares in which the enemy forces were said to have been were declared to be suspected of being mined. As a result of subsequent search, however, mines were not found.

The report of the *V–189* furthermore gave occasion for the order that vessels with masked lights off the Ems were to be regarded at once as belonging to the enemy. The Dutch Government was reminded of the dangers that must result from vessels with masked lights staying off the Ems. When later the airship *L–3* sighted at Terschelling a Dutch cruiser with four torpedo boats the conviction was reached that they were probably the same vessels as those reported by the *V–189*. The Ems group of the Second torpedo boat flotilla dispatched on the same day which had advanced as far as 152 and 001–E had on the contrary seen nothing of the latter or of enemy vessels. The Dutch Government was now requested to remove all doubt as to the neutrality of its vessels by illuminating the war flag at night and so avoiding accidents.

After the great long-distance undertaking of the U-boats on 6–11th the *U–13* and *U–15* were missed. This gave occasion for a new advance conducted by the First leader of the torpedo boats, Rear Adm. Maass, with the *Cöhn* and the Sixth torpedo-boat flotilla on the night of August 12 which, planned similarly to that of the 9th in spite of extending 150 nautical miles from Helgoland, was without any result.

Not until the night of August 15 was for the first time a larger number of torpedo boats employed, this time in the sector north to west northwest of Helgoland so as to surprise English U-boats supposed to be there in waiting. The *Cöhn*, *Stuttgart*, and the First and Second torpedo-boat flotillas again took part under the leadership of the First leader of the torpedo boats. At first a further extent than hitherto was planned; this intention was, however, allowed to drop so that a cutting off of our own forces by those of the enemy, the breaking through of which was expected during darkness, would be avoided. Apart from bringing in two Danish steamers, the *Ficarius* and *Fragana*, which were bound for English ports with food, this undertaking, too, was without result. A trip of the Third torpedo-boat flotilla which was carried out on the same night from the Ems in the sector west northwest to west of Borkum as far as across Terchelling was likewise without result.

The following days brought then the already described advance of the *Strassburg* and *Stralsund* into the Hoofden as well as the trips to Dogger Bank, while the airship *L–3* even succeeded in exploring as far as the Norwegian coast. Nothing, however, apart from the Hoofden, was established in regard to enemy surface forces.

On account of the U-boat danger all were considerably busy. Even the anchorages of the fleet on the Jade and Weser were not regarded as safe from U-boats. Net obstructions were ready after the first half year of the war and even the ship obstruction on the Elbe, originally considered only a protection against destroyer attacks, did not seem effective with certainty against U-boats. As long as effective protections were lacking, primary reliance had to be placed in the difficulties of navigation which from the nature of the currents and depth of the Jade and Weser opposed a U-boat attack. All dreadnaughts had their protective nets always in position at the anchorages, while lookout and artillery were manned for immediate defense. From the same cause the protection of the river mouths was still further augmented by special patrol vessels. This protection had been hitherto regulated on the Jade and Weser as follows:

By day the old fishery cruiser *Zieten* patrolled the Wangeroog Channel while the small old cruiser *Ariadne* together with the artillery tender *Drache* lay in the Jade mouth, and the station yacht, a former division torpedo boat, protected the Weser mouth. As a support the small old cruiser *Niobe* was placed in the Weser channel. The *Ariadne* retired there at night so as to be less exposed to torpedo boat attacks. The *Zieten* was supported at night by two torpedo boats while three more torpedo boats occupied the Jade mouth as well as one boat the mouth of the Weser during the night. (Cf. also, Appendix No. 14: Protection of the Jade and Weser by a harbor flotilla.)

On August 12 there were 14 fishing steamers ready to sail in the river mouths, six of these were to strengthen the protection of the Jade and four each the protection of the Elbe and Ems respectively. A week later the constant patrol of the Ems mouth was given exclusively to fishing steamers so that the torpedo boats hitherto employed for this purpose were free for extensive exploration. In this they were occasionally supported by aircraft.

A question which had been the subject of much consideration was the protection of the U-boats lying in Helgoland Harbor against aerial attack by day and artillery fire at night. On August 11 after four 10.5 centimeter rapid-fire guns had been installed on the west and east moles of the U-boat harbor respectively, and on the highland two 8.8 centimeter rapid-fire guns controlling the North Harbor were ready for use. A cruiser was then detailed to assist in the harbor defense at night at the wish of the commandant's office. (Cf.

Appendix 15. Order the Commander of the Scout Forces for the protection of Helgoland Harbor.)

Special precautions were needed against the U-boat and mine dangers when dreadnaughts were cruising in Helgoland Bay. When on August 11 the battleship *Grosser Kurfurst* and the four training cruisers left the Jade to pass through the Kaiser Wilhelm Canal to Kiel for purposes of improvement, while at the same time the *Blücher* was expected in the Jade. A torpedo boat flotilla convoyed the ships as a U-boat screen and Helgoland Bay was watched by powerful aircraft for enemy U-boats. On another occasion the channel from the Jade to the Elbe was even marked with channel buoys to clearly indicate the sections that had been mine-swept.

When ship movements became more frequent so that the squadrons felt confident in making speed through the mine barrages on the Jade and Elbe, this was discontinued. On August 16 the battle cruisers went for drills in Helgoland Bay while the first squadron was enroute for the Elbe and the second squadron for the Jade. The protection against U-boats was for this purpose so arranged that from 6 a. m. on the third mine-sweeping division searched the German bight but without apparatus. However, scarcely had the drills of the large cruisers begun when the alarming report came in from the steamer *Silvana*, the flagship of the chief of the North Sea outpost flotilla, that it had sighted three enemy U-boats submerged off the Weser in 147–E. Immediately the battle cruisers left in quarter line formation at high speed on a course north-northeast to north and the eighth torpedo boat flotilla was summoned to the U-boat protection while the sixth torpedo boat flotilla began to chase for enemy U-boats in the aforesaid square. When it developed that the report was again improbable—"only suspicious places had been observed in the water," the large cruisers deferred their artillery drills. The good experiences which in spite of all previous fears, had been gained by the going to sea of the dreadnaughts facilitated by its encouragement the gunnery exercises of the first and second squadrons as well as of two ships of the third squadron in the inner German bight and the Elbe mouth. The ships were abundantly protected by torpedo boat flotillas against U-boats.

Meanwhile it had been possible to make available for the outpost service an additional number of fishing steamers. On August 18 new rules for the protection of the German bight were issued by the commander of the scouting vessels. (Cf. also, Appendix No. 16.) Accordingly besides the several times mentioned torpedo-boat line seven of these outpost boats were placed on the line Helgoland Süder-Hever and five on the line Helgoland-Spiekeroog, which cruising at distances of 3 to 4 miles apart were to prevent the penetration

of enemy U-boats that perhaps might have passed the outer torpedo-boat line.

In addition, a mine-sweeping division was to daily search the bight from Helgoland out for U-boats and for its support another torpedo-boat flotilla was kept in readiness. As soon as U-boats had been reported in the inner German bight it was desired to compel them to frequently submerge and to make their stay difficult by zigzag courses. Other means of combating them were not then available.

Behind the line of outpost boats were usually three cruisers; a convoy cruiser, with one of the two leaders of the torpedo boats, was clear for departure in one of the river mouths. At night the outer torpedo-boat line was withdrawn into an arc that had a radius of 25 nautical miles about the Elbe lightship, while on the other hand the position of the cruisers and outpost boats was the same as by day. At night another small cruiser protected Helgoland Harbor, while a torpedo-boat flotilla was kept there ready to go out and attack at a moment's notice. By day this task fell to the ready U-boats. For its execution the chief of the first U-flotilla issued an order on August 25 which provided for the immediate occupation of a line 12 nautical miles long south of Helgoland by five U-boats, and a line 9 nautical miles long east of Helgoland by four U-boats. The other boats were to assemble southeast of Helgoland in square 158–E. (Cf. Sketch and order of the chief of the first U-flotilla concerning behavior of U-boats on sudden approach of the opponent to Helgoland, in Appendix No. 17, 17a.) All light forces had explicit orders to prevent by all means barrage undertakings against the Jade, Weser, and Elbe.

On the Ems there was besides the harbor flotilla a small cruiser of the fleet with a torpedo-boat flotilla in addition to the small old cruiser *Arkona* and four fishing steamers. In particular it was the duty of the torpedo-boat flotilla to reinforce the patrol of the Ems at night by the outpost vessels. For this purpose one group of boats kept itself in readiness off the river mouth for attack on mine layers and cruisers, but it was to give way to destroyers if convinced that the destroyers were not followed by enemy forces. The rest of the flotilla was to put out at once from Borkum Roadstead on reports of sighting enemy forces. At dawn the entire flotilla went, if possible, to Emden for rest or anchored on the Ems to resume its post again on the coming of darkness. The cruisers were to participate alternately in the guard duty. (Cf. Appendix No. 18, Order of the chief of the High Seas Forces for the patrol of the Ems.)

From these facts it is evident how considerable the employment of light forces for the protection of the German bight and the river mouths alone was at this time. By day there were not less than four cruisers, two torpedo-boat flotillas, and a mine-sweeping divi-

sion; at night five small cruisers and three torpedo-boat flotillas in the protection. In the month of August the flotillas had on the average only 12 days in port for cleaning boilers, replenishing fuel, and rest for the men. Nevertheless, the guard service was still further expanded when on August 25 a U-boat attack on the *G–111*, just outside of Helgoland, had shown the presence of enemy U-boats and even within the protection line. After a conversation of the fleet chief with the commander of the scouting forces it was ordered that by day a triple and at night a double protection line should be laid out. The previous torpedo-boat screen was still farther advanced to a distance of 25 nautical miles from Helgoland; as a middle outpost line there was stationed a mine-sweeping division at a distance of about 12 nautical miles from the outer screen and behind it stood the fishing steamers in the already mentioned positions. (Cf. Appendix No. 19. Protection line of the commander of the scouting forces of August 26.) As one of our U-boats had not been able to penetrate a triple protection off the Firth of Moray, so by the measures now taken the German bight was considered to be protected against the penetration of enemy U-boats.

An airplane report that it had sighted on August 27, at 6 p. m., about 50 nautical miles from Texel, an enemy destroyer running at high speed on a southwest course, gave occasion for reinforcing the Ems patrol for August 28 by another torpedo-boat flotilla which was to be there on August 28.

Such was the protection of the German bight when on August 28 at 5.30 p. m. the first torpedo-boat flotilla with a total of nine torpedo boats was transferred as planned from the night protection to the day protection line. (See Chart 18.) A light northwest breeze was blowing and the sea was smooth. The sky was overcast and the weather threatening when the boats were beginning their zigzag course in the outpost line. Suddenly, shortly after 6 a. m., the *G–194*, commanded by Lieut. Buss, at its position about 16 nautical miles northwest of Helgoland, sighted two periscopes of a U-boat only 50 meters from the starboard side, which immediately disappeared, while a strong eddy betrayed the firing of a torpedo. Immediately thereafter followed the wakes of two torpedoes, which passed under the boat. Putting the helm hard over and at top speed the commanding officer turned toward the U-boat, which, however, unhindered, disappeared beneath the surface on a northwestern course. Concerning the episode, he sent the following radio at once to the first leader of the torpedo boats on the *Cöln:*

Was fired upon by submerged U-boat at 6 a. m., in square 142–E center; two torpedoes; not hit. Saw periscope. Distance half a hectometer. False alarm inadmissible. Enemy U-boat steering a northwest course.[1]

[1] At the first sending of the radio report, 2.25 a. m. was given instead of 6.05 a. m., so that an interrogation of the *Cöln* and repetition of the entire message was necessary.

This report contained nothing unusual in itself, for enemy U-boats belonged to the daily phenomena of the outpost service. Immediately, however, the U-boat defense went into effect as planned. At 7.10 a. m. there went simultaneously from the leader of the torpedo boats and from the commander of the scouting forces the order to the fifth torpedo-boat flotilla at Helgoland to chase the enemy U-boat and, at 7.12 a. m., from the latter to the aviation division to participate in the chase with airplanes. This U-boat report acquired special significance, however, when, from 8 a. m. on, urgent radio messages from the *G–194* and from its right and left neighbors in the outpost line, *G–196* and *V–187*, came in, which reported the presence of enemy surface forces in the outpost sector. The first occurrence of this kind since beginning of the war.[2] Up to 9 a. m. the following description was obtained by those in charge from these reports:

At 8.06 o'clock the *G–194* reported that it had been attacked by a large enemy cruiser. This radio, however, crisscrossed with other reports and therefore was not picked up by the first torpedo-boat flotilla, the *Cöln*, and the command until 25 to 30 minutes later. Likewise the boat did not until 8.25 o'clock get through the report that since 8.05 it had sighted detached enemy forces in 142–E on a southern course. As was evident from a simultaneous report of its right-hand neighbor, *G–196*, the *G–194* was chased by enemy cruisers in 142–E; the *G–196* itself, according to a signal at 8.35 o'clock, likewise had been engaged with detached forces. Meanwhile the *V–187*, the flotilla flagship, according to a radio report at 8.24 o'clock, sighted two destroyers on a south-southeast course in 116–B. At 8.45 it reported two small enemy cruisers in 132–B on a southeastern course and at 8.50 two more enemy cruisers in 131–B. Since 8.25 o'clock it appears that in addition boats of the fifth torpedo-boat flotilla, in particular the ninth torpedo-boat half flotilla, had been in the fight in 142–E. At first 4, then 9, and finally 20 destroyers and a cruiser were reported, which were chasing the fifth torpedo-boat flotilla. The latter asked for cruiser assistance at 8.45 o'clock.

The countermoves of the commander of the scouting forces as officer in charge of the protection of the German bight followed the reports in rapid succession but suffered from the specially unfavorable distribution of the small cruisers of the High Sea Fleet on this

[2] Cf. Appendix No. 21: "The radio messages of August 28, 1914." The radio messages were almost without exception sent in code, the various receivers having to employ various lengths of time, according to the amount of work on hand, in decoding them so that the times at which the radio messages reached the bridge or the leader varied on the average about 10 to 15 minutes from the time of receipt. Further, for the benefit of the uninformed, it may be said that the radio messages were listened to not only by all the specially designated receivers at that time but in general by all ships, torpedo boats, coast radio stations simultaneously, and the most important messages were also specially transmitted to stations having a different wave, so that, apart from the already mentioned difference in time of decoding, an almost simultaneous report to all stations concerned was afforded

day. By chance the three weakest ships were on the outpost line, the *Frauenlob*, *Stettin*, and *Hela*, of which the latter on account of her weak armament could not be considered in a serious engagement. Besides the chief cruiser of the torpedo boats, the S. M. S. *Cöln*, departing from the rule, had gone into Wilhelmshaven for brief coaling, where were also the *Strassburg*, *Stralsund*, and *Rostock;* the *Kolberg* lay in the roadstead; the *Danzig* and *München*, coming from the Baltic, were not reached until at Brunsbüttel. [1] Accordingly, at first for the support of the pursued torpedo boats only, the *Stettin* and *Frauenlob* were available as outpost cruisers. The *Stettin* at once received orders, "chase the destroyers"; the *Frauenlob* the order "proceed together against the destroyers." Toward 8.50 o'clock both ships reported that they had understood the corresponding radio messages. The *Stettin*, however, had of her own accord weighed anchor at 8.32 on receipt of a radio that four destroyers were in sight, and reported at 8.58 o'clock: "*Stettin* is proceeding in the direction of enemy destroyers; our U-boats are taking up a position of attack." When enemy cruisers were also reported the *Cöln* and *Strassburg* received orders to sail at once as a support, the *Kolberg* to hastily get up steam, the *Stralsund* to come to the roadstead, and the *Danzig* and *München* were to go down the Elbe from Brunsbüttel. The *Mainz*, which lay in the Ems, was still kept back.

At 9.10 a. m., accordingly, the *Strassburg* left the harbor and at 9.30 a. m. the *Cöln*. As far as small cruisers were concerned, with this the measures were exhausted. Unfortunately, on this day there was low water at 10.33 a. m. on the bar of the outer Jade, so that dreadnaughts, especially the battle cruisers, according to previous experiences in sounding and on the basis of the survey, could not pass this bar in the time from 8 a. m. to 1 p. m. Considering this circumstance, the battle cruisers did not receive orders until 9.20 from the commander of the scouting forces to get up steam. With the exception of the *Blücher* they were in Wilhelmshaven Roadstead. The *Moltke* and *Von der Tann* were able to be clear for sailing at 12 noon; the *Seydlitz*, the flagship of the commander of the scouting forces, only, however, with the starboard engine, as the main port condenser was being retubed. The *Blücher* could, so far, be taken through the locks out of the inner harbor. On the fleet command being asked whether the *Moltke* and *Von der Tann* ought to go out as support as soon as they were ready, the latter answered in the affirmative with the limitation "if the enemy is then still there."

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[1] After the *Magdeburg* had gone aground on the Russian coast, the commander in chief of the Baltic, besides other ships on the order of the war command was allowed the *München*, the *Danzig*, and the fourth torepdo-boat flotilla. On urgent remonstrances that these forces could not be spared from the projection of the German bight, the commander in chief of the Baltic sent these forces back to the North Sea. On August 28 they were at Brunsbüttel on their way back.

Nothing was changed in the preparedness of the battleships as it was assumed by the fleet command from the reports that had so far been received that it was a question merely of an attack of a considerable number of destroyers and some small cruisers. The report of the *G–194* concerning sighting a large cruiser without stating the position which moreover was not confirmed from any quarter was from the start not seriously considered. This view of the report was indeed correct for actually as was evident from its war diary the boat had sighted only a small cruiser, still the false report in this case might have had exceptionally good success if in the fleet command as well as in the light forces it had given rise to the thought at the right time of the possibility of the presence of large ships as well. Perhaps other ways would have been pointed out for the conduct of the small cruisers as well as for the employment of the dreadnaughts at the start.

The only battleship on the outpost was the *Helgoland,* which immediately went from Schillig Roadstead to take up a position toward the outer Jade, but inside the bar. For its replacement the *Thüringen* weighed anchor at 9 a. m. in Schillig Roadstead and went on down the Jade. The other two ships of the *Ostfriesland* class lay together with four ships of the *Kaiser* class in Wilhelmshaven Roadstead while the ships of the *Posen* class were in port. There lay also the fleet flagship *Friedrich der Grosse* and in fact in dock. The second squadron was on the Elbe. The ships of the *Konig* class were still undergoing trials in Kiel, where were also the fourth, fifth, and sixth squadrons.

In the event that battleships were to go out, for vessels of the second squadron the readiness was set for one hour by Vice Admiral Scheer, then squadron chief, on the first reports of the enemy. Whether similar measures were also voluntarily taken by the other squadrons is not evident from the war diaries, such a measure was not ordered by the fleet command.

The chief of the first U-flotilla was on the *Hamburg* which lay in dock unable to sail so that the direction of the U-boats fell to the chief of the second U-flotilla on the *Stettin* off Helgoland. The general lines for it were laid down in the already mentioned order of the senior flotilla chief, the chief of the first U-flotilla. (Appendix No. 17.) Correspondingly an order went to the U-boats in Helgoland at 8.23 to take up the positions of attack as planned.

In Helgoland lay six U-boats which could not all be clear for sea immediately, as torpedo practices had taken place on the four preceding days and the boats had begun overhauling. Two boats only were clear for electric drive.

"For this reason and as according to the lively gunfire audible from a western direction immediate action seemed necessary."

Thus the half flotilla chief, Lieut. Spindler, expressed himself in the war diary. "I did not wait until all the U-boats were ready, but gave them individual orders as soon as they could put to sea. The U-boats went out at the following times: 9.09 a. m., the *U–16*, with the order to proceed to square 142–E and there, according to its own judgment, to seek in every way for an occasion to attack enemy forces. The *U–25*, with electric drive, only suitable for the vicinity was given orders to take up its position at the northern end of the second U-line provided by the chief of the first U-flotilla for enemy surprise attacks, which ran approximately in the direction of Helgoland-Weser lightship. (Cf. Appendix 17a.)

"Meanwhile the gun battle was heard from a southwestern direction, whereupon I decided that the undertaking was directed against the Jade mouth and therefore gave the other U-boats orders to take up their positions in this direction. At 9 a. m. the *U–5* went out. The *U–5* was to stop outside the Jade mouth. At 9.16 a. m. the *U–16* went out with the order to make for the gunfire perceptible from the southwest and to endeavor to attack the enemy forces advancing against the Jade mouth or retreating from there."

A similar procedure was followed by the boats of the fourth U-half flotilla *U–24* and *U–28*. These, toward 8.20 a. m., had gone out for target practice and submerged practice runs to the Loreley Bank and had already flooded their tanks in the practice zone when the *S–101*, the flagship of the fourth U-half flotilla, steamed up at top speed and transmitted the orders to them: "*U–28* battle at *Weser* lightship, *U–24* battle position 6 nautical miles northwest of *Weser* lightship and act according to its judgment." The trip thither of the U-boats was covered by the U-half flotilla chief, Lieut. Pranse, in the flagship. He intended subsequently to explore from 158–E westward.

Meanwhile the first clash at sea had come. The *G–194* after warding off the U-boat attack at 7.57 a. m. was in the outpost sector on a northwestern course when falling shells indicated nearby enemy forces although on account of the slight visibility the latter could not be made out until only 2 nautical miles away. The recognition signals made with the searchlight were not answered. The commanding officer, Lieut. Buss, therefore ordered the boat to turn around, and ran away from the enemy at top speed on a southeastern course. Not until a quarter of an hour later was it recognized that the enemy consisted of about nine destroyers and two small cruisers; the heavy fire of the destroyers could be answered. At a distance of 2,000 meters the first shells fell in the water behind the boat but the opponent soon got the range with the decrease in distance. Unfortunately the commander did not until 8.25 o'clock succeed in informing the leader of the torpedo boats by radio of what

had taken place after the flagship *Cöln* had been called in vain since 8.50 o'clock.

The companion ship on the north, *G–196*, leading ship of the second torpedo-boat half flotilla, on account of the slight visibility and a distance of 7.5 nautical miles from boat to boat in the outpost line did not see the *G–194*. However it heard firing at 8.5 o'clock in a western direction and ran at high speed toward the gun thunder, then after sighting the enemy kept on at full speed for Helgoland. At 8.15 o'clock the following radio report was sent to the *Cöln:* "*G–194* is being chased by destroyers in 142-E."

At 8.26 o'clock fire was opened by the *G–196* with the stern gun at a distance of 70 hectometers, but on account of the great distance and bad observation it was broken off again after 14 shots. This boat saw only one crusier and that, too, only in the beginning as it soon was left behind. The destroyers which pursued the German boats were close together in a wide echelon at a speed of at least 28 to 29 nautical miles. Only individual shots struck the *G–194* which boat remained completely undamaged as meanwhile the fourth torpedo-boat flotilla, commanded by Lieut. Commander Von dem Knesebeck had in coming up drawn the fire of the enemy on itself.

This flotilla had at 7.25 a. m. received the order to chase the enemy U-boat in 142-E. The boats had accordingly gone out at 7.45 o'clock and were en route separated in irregular formation at a speed of 21 nautical miles toward the middle of the square when at 8.25 o'clock the foremost boat *G–9* sighted several torpedo boats and noticed the flashes of guns. Uncertain as to whether it was their own boats, the commanding officer, Lieut. Anschütz, had his vessel keep on the original course until beyond a doubt four English destroyers could be recognized by their far forward bridge and the thick funnel in the middle. Fire was at once opened with both guns and soon after the boat turned around so that at 70 to 80 hectometers, at maximum speed, a withdrawing fight with the four destroyers took place on the right flank of which a leading cruiser could also be made out. Also the German boats following behind were in the hazy weather surprised by the appearance of the enemy. When the *V–2* saw shells falling around the *G–9* it was at first believed that the *G–9* had sighted the enemy U-boat and had begun firing on it, and the *V–1* on sighting a low column of water in the vicinity of *G–9* thought it to be a torpedo fired on the *G–9* until the outlines of the four destroyers were recognizable. But these too looked so like our boats, especially from ahead where the high funnel and the far forward mast were not so prominent, that only the fire of the enemy removed the last doubt as to their nationality.

The collision with the enemy would have seemed less surprising if the first radio report of the *G–194* had penetrated more rapidly to

the boats of the fourth torpedo-boat flotilla. On the leading vessel the first radio from the *G–194* was decoded at 8.10 a. m., and the *G–9* was not fixed until 8.25 a. m. There would, therefore, have been sufficient time to have had the boats proceed more cautiously and compactly. However, all boats turned around at the right time and withdrew from the pursuit in the direction of Helgoland without the enemy succeeding, as he endeavored, in forcing them toward the Holstein coast. Nevertheless the lesser speed of our vessels as compared with the destroyers very soon became evident, all the more because ours had only coal firing and so shortly after leaving port the fires were not hot enough. A further consequence of this was the strong development of smoke by which the firing of our own guns was hindered, making it especially difficult to get away from the enemy.

Before turning about the chief of the ninth torpedo-boat-half flotilla, Lieut. Hoffert, tried again with his leading boat *V–6* to approach the enemy and to get into favorable range for his own artillery so that the distance rapidly diminished to 48 hectometers. Consequently, as long as the flotilla had not yet collected, the enemy fire was concentrated on him. He was therefore compelled to turn off again and by course changes to make it difficult for the enemy to shoot. Meanwhile, when further clouds of smoke came in sight and the number of shells falling supported the supposition of a considerable superiority, the order was given from the flotilla boat, "Head for Helgoland." The boats formed in an irregular line astern at distances of about 600 meters apart on a course southeast to east, answering the fire with the stern gun, in doing which the distance gradually decreased from 70 to 50 hectometers. An observation was not possible; furthermore, on account of the high speed a part of the boats had their sterns so low that the line of sight in the case of pointing the gun dead astern pointed below the dip of the horizon, which set for 70 hectometers. Consequently, at times it was not possible to aim at the target itself.

The shots fired at first with maximum elevation were, as a consequence of the inferiority of our caliber, on falling, recognized as too short, so that the firing was for this reason stopped for a time. Beside this, the course of the fight permitted firing only with the stern gun. Against the superior fire of the cruisers and destroyers our own was as good as ineffective even when the battle distance in the case of some boats decreased to 55 hectometers; in the case of the *V–1* even to 35 hectometers. The amount of the ammunition fired during the almost three quarters of an hour fight was, therefore, comparatively small. On some boats it amounted only to 15 or 16, on others between 20 and 30 shots, and only the *S–13* and *V–1*, which on account of insufficient speed, gradually dropped astern and

therefore were longer in the fight, fired 40 and 51 shells each. The observation of airplane No. 21, which meanwhile had arrived on the field of battle, confirmed the fact that the shots of our boats mostly fell short.

On the island of Helgoland the first radio reports of the enemy came in, and at 8.30 a. m. gun thunder was heard and the alarm for the 21 centimeter guns and the mole battery was sounded. At 8.50 o'clock, however, the entire fortification was in a state of alarm. Immediately thereafter torpedo-boats were sighted from the island which steered past, part toward the North Harbor, part to the west of Helgoland, without it being possible, on account of the hazy weather, to make out whether they were English or German vessels.

On Wangeroog, too, gun thunder was heard in a northern direction coming nearer and rapidly getting stronger. Finally 17 salvos to the minute were counted. Battle stations were accordingly taken on the works. After 9 o'clock, however, the fire became gradually weaker and gradually went off in a northwestern direction.

On the other hand even the fire of the enemy in spite of the superiority of his caliber and the number of his forces as well as good distribution of fire was comparatively ineffective. For instance, at the beginning of the fight the enemy's shots fell, on the average, as much as 800 meters short, but even later, in the case of the guns of the destroyers, short shots were observed as a rule. A further advantage for our boats was that the shells fired by the destroyers for the most part did not explode. The 15 centimeter shells of the cruisers were easily to be distinguished from the shots of the destroyers by the heavy yellow detonation clouds.

In the meantime a small cruiser had been recognized on the right flank of the enemy, apparently the *Fearless*, while the number of the destroyers increased at first to 10, then from 18 to 20, belonging to the L-class (three funnels). The opening of the fight had been reported by radio to the *Cöln* at 8.28 o'clock, as well as, later, the approximate number of the enemy forces, a cruiser and 20 destroyers, and the position 142-E (8.38 o'clock).

In spite of the superior fire effect and speed of the opponent the situation of the flotilla first became critical when two boats, the *S–13* and *V–1* could no longer maintain the high speed. As a result of the burning low of the fires the *S–13*, Lieut. Adolf Müller, commander, ran finally at a speed of only 20 nautical miles, and dropped astern until 55 hectometers off; the *V–1* even until 35 hectometers from the enemy, so that the flotilla chief at 8.45 o'clock asked by radio for cruiser assistance. While the *S–13*, however, remained undamaged in this situation the *V–1* on the left flank of the line astern was soon completely covered by the enemy salvos.

At 8.50 o'clock the first shell, apparently from a 10.2 centimeter caliber, struck the upper deck amidships and penetrated to the aft fire-room where one man was killed and two were wounded. The compartments had to be vacated and the speed fell because of the loss of the boiler to 20 nautical miles so that the destroyers now rapidly drew near. To judge by the number of gun shots they were combining their fire on the damaged boat, the commander of which, Lieut. Siess, was able by a zigzag course to make more difficult the opponent's chances of hitting, in so doing at times bringing the bow gun into play. Nevertheless the boat received immediately afterwards another hit which tore a great hole in the starboard outside plating where the coal fortunately acted as a protection. The steering gear, however, was damaged and the valve of the forward turbine torn by shell splinters. At the same time the wakes of several torpedoes parallel to the boat were observed while the intention to likewise fire torpedoes was given up by the commander so as to save this last defense for sure hits.

At this critical moment the *Stettin* appeared on the scene of battle. Opening fire, it steamed at high speed toward the destroyers so that the latter had to abandon the torpedo boat, combining their fire on the new opponent and at the same time turning off to the southwest.

When at 8.32 a. m. the first report of the enemy had come in, the *Stettin*, with steam up in only eight boilers, was lying at anchor east of Helgoland dune in shallow water for the protection of the harbor and immediately, at the same time sending a radio report to the commander of the scouting forces, started in the direction of the square reported. The visibility was unfavorable and varied between 50 and 90 hectometers; close to the water it was better than at the height of the crow's nest. For this reason Helgoland, too, could not take part in the fight although it was within range of the island batteries and the chief of the fifth torpedo-boat flotilla just before the arrival of the *Stettin* had asked for fire from the batteries. Also, on the *Stettin* the enemy could not be made out until our own boats were close to the ship.

Concerning the further course of the engagement the commander of the *Stettin*, Lieut. Commander Karl August Nerger (later famous as the commander of the auxiliary *Wolf*) reported as follows:

The *Stettin* opened fire at 8.58 a. m., at 85 hectometers on the middle group of the opponent which seemed to be nearest and at the same time reported to the commander of the scouting forces: "Am engaged with destroyers." From the *Stettin* several well placed salvos were thereafter observed. From the signal deck it was reported at this time that the boat group under fire belonged to our own flotilla. The fire was for a short time stopped but the report was recognized to be an error. The groups standing to westward turned at this time on a southwestern course and went off at top speed in narrow echelon. Soon afterwards the eastern groups turned on a western course. They were then bombarded as they stood nearer. The opponent had at

this time about 20 destroyers with 10.2 centimeter guns and thereupon the report was sent to the commander of the scouting forces: "Urgent need of support; am in 142E."

Toward 9.5 o'clock a cruiser with four funnels was a short time seen behind the enemy formation and this observation was reported to the commander of the scouting forces: "Enemy cruiser is with enemy flotilla." Whether it took part in this engagement is not certain. The splashes from the enemy's shells in the immediate vicinity of the vessel were so numerous that they could not be counted. According to a report of the commander of the torpedo boats of the fifth torpedo-boat flotilla the splashes gave the impression that the *Stettin* was in boiling water.

So much for the report of the commander. While the *Stettin* rushed on the pursuers in this way the *V–1* had opened fire on the retreating opponent and apparently obtained two hits which were made evident by a column of fire at the middle funnel and a dark cloud of smoke at the stern of a destroyer. For the hard pressed boat the assistance of the cruiser came just at the right time, for without the energetic attack of the *Stettin* the *V–1* would doubtless have been lost. Meanwhile the fifth torpedo-boat flotilla continued its trip back to Helgoland as the flotilla chief did not relish a longer artillery battle with the destroyers, in view of the small size of his own gun caliber. It was not possible, either, to use torpedoes after the destroyers had turned to the southwest. In view of the superior speed of the enemy the therefore required forward position with reference to the enemy forces and in particular to the escort cruisers could not be attained.

In this decision the fifth torpedo-boat flotilla was further strengthened by the order of the first leader of the torpedo boats which came in at 9.10 o'clock: "First and fifth torpedo-boat flotillas back within range of Helgoland." A full use of the torpedo boats was then doubtless not considered, as corresponding objects of attack had not been sighted up to then. Consequently the boats headed for the southern outlet of Helgoland Harbor.

POLITICAL AND ECONOMIC SITUATION IN GERMANY AFTER BREAKDOWN OF LONDON CONFERENCE.

Source: Reliable.

(9382–I.)

9 March, 1921.

After conversation with bankers, leading industrial men, naval officers, and others of all shades of political opinions, the following conclusions regarding the situation in Germany are held to be true by all Germans:

(1) That Germany would not sign the reparations note as presented by the entente was well known in Germany before the delegates went to London.

(2) The entente demands were considered to be far in excess of any amount the Germans could pay.

(3) The German counterproposals set the limit of Germany's ability to pay and to keep on working. If the entente demands that all profits from German industry be turned over to them, the Germans will have no incentive to do any work.

(4) The restrictions on coal are considered to be the most serious blow to German industry.

Since negotiations in London have been broken off the Germans regard the occupation of the Ruhr district with entire equanimity. The Germans realize that the entente now controls the entire coal supply, but feel that if Germany gets no coal, neither will the entente; and further, that if Germany's industry is ruined, the whole of Europe and probably America will also suffer from this cause.

The best opinion seems to be that Germany will sign any agreement that they can reasonably carry out and which will help the restoration of France, but they will resist (passively) to the utmost any attempt to force the signature of a treaty which can not be carried out.

Bavaria and East Prussia still possess the Einwohnswehr, with sufficient arms to preserve order against popular uprisings. The royalists in Bavaria would support a movement led by Gen. Ludendorff if it promised any measure of success, but from a conversation the Naval Observer recently had with Ludendorff, it appeared that the General had been warned by Mr. Hugo Stinnes about February 20, not to take any active part in any military demonstrations, and to give up all idea of inciting the people to resistance of the allied occupation.

Germans feel that the interests of America lie in Germany commercially, and that the United States must, in her own interests, prevent the destruction of German industry and commerce.

It is believed that the last German counterproposals having been refused, Germany will make no further advances. The people seem to be united in their views as given above.

DETAIL OF ARGENTINE NAVAL OFFICERS TO THE BRITISH NAVY FOR INSTRUCTION.

Source: Reliable.

21 February, 1921.

(14310.)

Since the recent changes in the Ministry of Marine, the advisability of sending officers to the British Navy for instruction has been agitated. It is not known whether or not England has extended any invitation for Argentine naval officers to receive such

training; but this is probable, for the British naval attaché is very considerably impressed with the enthusiasm of Argentine naval officers for the United States Navy, and it is common knowledge that Argentine naval officers who have been in the United States Navy or in the naval commission in the United States have succeeded in preventing the purchase of Italian and British submarines, aeroplanes, and munitions by using arguments that it is ridiculous to train officers in one Navy (the United States Navy) and then buy other apparatuses, ships, etc., than those used by those officers during the training.

The sending of officers to the British Navy is opposed by those who have been in our Navy, who argue that the United States is the only country which can be expected in the near future to spend sufficient money on its Navy to bring about progressive development; and that the great amount of information given out by the United States Navy is in great contrast with the niggardly policy of the British.

JAPANESE ACTIVITIES IN SWITZERLAND.

Source: Reliable.

7 March, 1921.

(14309.)

Information has been received of the first conference of the League of Nations at Geneva. Japanese agents in Switzerland have issued invitations by special courier to all the Asiatics to attend a pan-Asiatic conference to be held at Lausanne in the month of April, 1921. This list includes the following peoples: Japanese, Chinese, Koreans, Malayan, Filipinos, Tonkinese, Siamese, Hindustanis, Afghans, Baluchistani, Indian Nationals, Persians, Arabians.

It has already been a cause of considerable comment in European circles, the large force of officials, newspaper men, scientists, and clerks which were brought to Switzerland to attend the League of Nations conference.

Baron Hyashi when questioned on the reason for so strong a representation stated that Japan was so deeply interested in the league that all these men were brought to get a thorough insight into the whole affair and that they were then to return to Japan and preach this policy throughout the land. This opportunity has been grasped to arrange the pan-Asiatic meeting which is the subject of this report and two whole floors of the Palace Hotel at Lausanne have been engaged for the month of April, for this purpose.

This report has been confirmed by members of the Polish legation which have lately arrived from Poland.

JAPAN—POLITICAL CONDITIONS.

Source: Reliable.

30 March, 1921.

(11953.)

Japan is ruled by the military element. The people are still under feudal control. There is no hope for escape from this rule until the country suffers a defeat in war, and the military are discredited and overthrown.

Japan is a militaristic nation, exactly as in the case of Germany. This fact is realized and admitted, in confidence, by a few of the younger officials who have been educated abroad. One of the young officials even went so far as to say that he hoped war would come between his country and the United States, because, although he realized it meant defeat for Japan, it was the only way his people could escape from military government.

The students and the younger officials are the hope of the future. They, together with the clerks, who are comparatively well educated, widely read, and badly paid, are nowadays in a state of unemployment and discontent because of the hard times following the slump of April, 1920.

The clan system prevails in the schools, as well as in the army and navy. For years certain firms have spoken for the graduates of particular schools, and restricted their employees to graduates of these schools.

Before the World War the graduate was sure of a position; during the war the demand was far in excess of the graduates, but since April, 1920, only one-third or one-quarter of the graduates are able to get work, thus leaving many students disappointed and dependent upon their families. Their disappointment takes the form of railing at the Emperor and obscene and disrespectful comments upon the divine origin of the imperial house.

In the modern-language school the worst behaved and least industrious students are those studying Chinese. These are sure of official positions in China. They are also the most athletic, and openly declare that the Chinese must understand them or receive kicks and blows instead of words.

Eighty per cent of the population is agrarian, and hardly educated at all. (In the agricultural districts they have only elementary schools.) They are unfit for suffrage, and take no intelligent interest in the Government, being satisfied to do as they are told. The people will do as their rulers tell them. They are accustomed to obedience.

The political and commercial control of China is the end and aim of the Japanese foreign policy. She is daily engaged in working to this end by economic penetration. Russia being in a state of chaos and Europe being prostrate, and having only the United States to

consider, Japan is apparently preoccupied with the idea that now is the time to gain control of China. She is, therefore, expediting her plans to that end, and preparing a navy adequate to discourage possible American interference. Japan dreads lest American capital obtain control in China, and fears that American industrial imperialism will menace her economic existence. Were America to organize and finance the abundant labor and enormous material resources of China, Japan feels that she would be undone. Japan is, therefore, bending every energy to obtain control of China and to preserve that country entirely for her own economic exploitation. She is preparing at top speed to prevent interference from outside, by force of arms if necessary.

RELATIONS BETWEEN COLOMBIA AND JAPAN.

Source: Reliable.

30 March, 1921.

(580.)

Mr. G. De Civrac de Bordes called and stated to the United States consul general, Yokohama, that he felt it his duty as an American citizen he should report that while acting consul at Yokohama for the Republic of Colombia, two years or more back, he received certain instructions from the Colombian Government which he ignored. These instructions directed him to conduct negotiations for the sale of mineral oil properties in Colombia to Japanese. He stated that, since the arrival of his successor, Consul General E. Espinosa-Guzman, such negotiations have been taken up vigorously, and it is said that one of the principal intermediaries employed by Guzman for the purpose is a Japanese named Sugawa, carrying on business at No. 210 Yamashitacho, Yokohama. This Sugawa has a shady reputation in business circles.

Mr. Civrac de Bordes also informed the consul general that he had been approached by a Japanese naval officer for the purpose of obtaining detailed information concerning the port of Buena Ventura, Colombia, where operations are, or will be, undertaken for the construction of a large dock and other naval facilities. This port is within striking distance of the Panama Canal.

SENTIMENT TOWARD THE UNITED STATES IN ECUADOR.

Source: Reliable.

(9467.)

4 February, 1921.

This article, entitled "Desde lejos" (From afar) can be taken, I believe, as expressing very concisely the feelings of the majority of Ecuadoreans toward the United States of America.

As you will observe, there are in this article conflicting emotions of admiration and hatred based upon fear and a feeling of inferiority.

The Ecuadorean can not but admire our material achievements, and he also admires the generosity and charity which characterize some of the acts of our people. But at the same time, the fact that Latin Americans are placed on the silver roll at Panama, along with Negroes and Chinamen, instead of being placed with North Americans, galls his pride immensely. Naturally he recognizes, in the bottom of his heart, that the average Latin American is inferior to the North American, but he can not bear to see this paraded publicly, nor even to admit it openly himself.

And then of course comes the fear which arises from a contemplation of our strength. He reviews our past actions in Latin America (mentally), and he knows that in case we so desire, we have the power to dominate Latin America in any manner we see fit. He feels his weakness, and he hates us for our strength.

The author of the attached article is evidently an Ecuadorean who has gone recently to the Canal Zone. I do not know anything further regarding him, but I do consider that his viewpoint is fairly representative of the Ecuadorean position of to-day, with regard to the United States. They are not so blinded as the Colombians, and are willing to voice an admiration for things North American which seem to them worthy of admiration; but at the same time, they feel that we look upon them as inferiors, and this deeply wounds their pride. And in addition there is an undercurrent of the same fear which prevails throughout Latin America, a fear of what is known to Latin Americans as "Yankee imperialism." Our interventions in Latin-American affairs, such as that in Santo Domingo, in Nicaragua, and in Haiti, are considered by most Latin Americans nothing but imperialistic acts, thinly disguised.

The militarization of the United States has been a phenomenon of very rapid development; it was hastened by the war, though previously it was coming with slow but nevertheless certain steps. Nothing remains of the ideal country of Franklin and Jefferson; it can even be foreseen that the militarism of the great Republic will be more pronounced than that which has just been overthrown in Germany. Inevitable outcome of the aggrandizement of a Nation.

At the present moment, there predominates in the Yankee spirit an extreme feeling of distrust. Perhaps the means by which the country has been elevated to its present position have not been worthy; perhaps, in the national conscience, there is a certain element of remorse * * * the fear that at any moment they may jump upon other helpless creatures.

In certain regards these strong men of active America are childish. They are almost idiotic in the precautions they take in regard to those who enter their country. What a lot of questions, what a lot of captious interrogations, what foolishness! All that one has read of Russian distrust in the time of the Czars is nothing as compared with what now takes place in free and democratic America.

At the same time a diabolical pride dominates them. They feel themselves masters * * * and in this they are correct: The American Eagle, like that of the Caesars, flies proudly throughout the world.

The experience of all time has shown that discipline is the best means of managing men; the triumphs of the Catholic Church prove it. Militarism is a form of discipline perhaps even more effective than religious devotion.

But one is forced to admire the Yankees; the works that they have accomplished entitle them to first place among the human race.

And now one's admiration increases as he contemplates the great work they are accomplishing along moral lines; it is something gigantic, something that has not heretofore been attempted on so vast a scale, and something that is being done by methods more effective than have been known in any previous time. Reform in every sense, accomplished by a united Nation with the most generous outpouring of public spirit.

Balancing the account, it must be confessed that an immense sum stands to the credit of Yankilandia. Just now America has undertaken the maintenance of a million guaguas [children] in unfortunate Germany. * * * A million children who would die of hunger this winter if they were not helped.

But leaving this high sociologic theme, we must turn to the more prosaic field of commercial life. For the moment, the most noticeable thing is the lack of cargo for ships. Those of all nations are tied to the wharves days upon days, waiting to obtain a few tons of cargo. The *Advance*, in which I came, made all the ports of Ecuador, and (who will believe it?) being once in Esmeraldas, returned to Manta (where it had already called) to take on a few bales which were offered at the last moment.

Unheard of prices prevail here. Judging by what one sees, freights will soon be very cheap. Things have always been dear in Colon, but now they are higher than ever. In general, and considering the exchange as 300, everything costs 5 to 7 times what it does in Quito. I imagine that wages are in proportion, at least there is no poverty visible; employees of every class are well dressed, and it takes lots of money to dress well in this country.

The canal is a monster which will devour the Republic of Panama. According to the Hay-Varilla treaty, the United States has the right to take possession of any territory necessary for the maintenance and defense of the canal. Well and good; but this stipulation is interpreted by the Yankees in a one-sided manner; they take territory where they do not need it, and this without consulting Panama. The Government of Panama protests, risum teneatis amici!

The repugnance which the Anglo-Saxon shows toward mixing with races which he considers inferior is well known; this trait might even be called a racial characteristic. The Anglo-Saxon, in the territory which he dominates, lives apart from the native population; it is not thus with the Spaniard, who even forms crosses with the orang-utans of Africa.

There are special regulations in the Canal Zone to maintain inferiors at a distance, and it might be said that these regulations extend to every walk of life. The Negro, the Spaniard, and the yellow man on one side; the Yankee on the other.

The former can not receive salaries greater than 85 sucres; they are included in the list known as the "Silver roll;" while the latter belong to the "Gold roll." Between the two classes, silver and gold, there is nothing in common.

Neither pay-offices, nor official stores [commissaries] where goods are sold to employees at low prices—nothing, in short. The procedure in question, as a means of dominating the situation, could not be more effective. What one laments is that our people are placed on the same level and footing as the Chinese; when in our own country we consider ourselves white; but this is the state of things.

Our gentle manner of speaking and our genial courtesy contribute much toward having us placed in the list of inferiors. The Yankee views these things as evidence of abjection. Is not, indeed, the Chinese people the most courteous in the world? Very well; our courtesy is taken as Chineria [something Chinese] in thes latitudes.

Further, it is true that an emphatic and decided tone predisposes one to judge favorably the individual who employs them; there is something dominating about his manner. A good pose is a great factor in a man's success.

SOVIET RUSSIA (ECONOMIC).

Source: Reliable.

(14230.)

9 March, 1921.

Transport.

A great lack of railroad ties will be felt in the spring as none are being made and all on the permanent ways are in a bad condition.

There are no materials to repair the permanent way. Last year the difficulty was surmounted by removing one set of rails and sleepers from double lines and repairing the remaining single line and constructing fresh railways. This method can no longer be employed.

There are only two trains for the whole of the Moscow suburban traffic.

The shortage of mechanics is greatly felt.

Working conditions on the railways are more severe than in factories, and thus a good deal of desertion occurs in spite of the fact that the transport workers are mobilized.

Snowdrifts have added to the crisis, since men could not be obtained to clear the lines.

On many lines freight trains cover only 50 versts daily.

Fuel.

A factor which has contributed greatly to the fuel crisis is the lack of horses, which has made it difficult to get wood to the railways. In many districts of the Tambov Government, for example, the number of horses available has been reduced by 50 per cent.

All the efforts of the Government to improve the situation have failed. The "5-days period" (Pyatidnevka) to transport the cut wood to the railways resulted in only 37 per cent of the workers appearing, and only some 25 per cent of the requisite amount was moved.

Food Supplies.

The breakdown of railway transport made it necessary to curtail rations, and in Moscow on February 20 the amount of bread allowed by the card system was as follows:

Category A, 1 pound per diem.
Category B, one-third pound per diem.
Category C, one-sixth pound per diem.
Children's cards, one-third pound per diem.

Even the above were not obtainable and some people have been nearly two weeks without bread.

By a decree of the Soviet of Peoples Commissars dated February 8 all extra ration allowances were reduced to the normal and the issue of privileged rations to Government employees cancelled.

The crisis has caused an extraordinary increase in the prices of foodstuffs obtained through "speculators."

The issue of free rations by the State, and cancellation of payments for food, has only resulted in a saving of 300 to 500 rubles monthly to the ordinary citizen, since the quantity of foodstuffs which could previously be purchased from the State at low prices was very insignificant.

Industry.

All branches are threatened with a tie-up owing to the fuel crisis, and the situation is serious.

In Petrograd 90 factories and works have closed in February (including the Putilov, Sestoretz, Franco, Russian, Siemens, Galske, and Treugolnik works), and some 300,000 men are affected.

In Moscow the situation is slightly better, though there are now (February 29) 13,000 unemployed, and it is proposed to close the woodworking factories and other less essential concerns very shortly.

Cotton.

There are said to be some 700,000 poods of cotton in the central governments of Russia.

The transport crisis has prevented the transport of 2,000,000 poods which the "Glavtextil" (chief textile department) states is lying ready in Transcaspia.

All the former Afghanistan plantations are still producing supplies, also those in the Kaukand area and around Merv.

The flax harvest was very poor, and the crop could not be conveyed to the factories owing to transport difficulties. Exact figures will be furnished.

OIL PRODUCTION IN THE BRITISH EMPIRE.

Source: Reliable.

24 March, 1921.

(10943)

The official figures for 1920 of oil production in the British Empire are as follows:

	Barrels.
India	8,500,000
Trinidad	2,083,115
Egypt	1,080,000
Canada	198,425
Sarawak	655,000
Australia and New Zealand	11,000
England (Hardstoft Well)	2,909

United Kingdom.

Oil production in the United Kingdom has not yet passed the experimental stage. Considerable prospecting has been done, but so far there is only one well actually producing oil, and that in small quantities. Experts profess to believe, however, that oil deposits in the

United Kingdom are more or less extensive and that, in time, they will prove a valuable source of supply.

The official figures of oil imports into the United Kingdom during 1920 show a total of 870,027,440 gallons, as follows:

	Gallons.
Illuminating oil	160,951,946
Motor spirit	207,739,144
Lubricating oil	105,914,877
Fuel oil	341,771,044
Gas oil	53,564,775
Other descriptions	85,654

No statistics are published showing oil consumption in the United Kingdom. The figures under this heading are officially arrived at by simply deducting the total exports from the import receipts and after ascertaining the stocks of oil in the country. It can be assumed that stocks of oil in the United Kingdom generally increased during 1920, and that the whole of the imported oil did not pass into consumption. The amounts of oil exported in 1920 are returned at 49,000,000 gallons, of which 28,000,000 gallons were motor spirit. allowing for a fairly substantial increase in stocks, it is reasonable to assume the consumption of oil products in the United Kingdom in 1920 at about 750,000,000 gallons. It must be also taken into account, however, that substantial quantities of oil fuel were bunkered on Cunard vessels for consumption on the Atlantic Ocean, but these quantities can hardly be classed under the heading of oil consumption in the United Kingdom.

Oil-Burning Vessels.

On June 30, 1919, the shipping of the United Kingdom consisted of—

	Per cent.
Coal-burning vessels	82.0
Oil-burning vessels	10.5
Internal-combustion engined vessels	1.5
Sailing vessels	6.0

On June 30, 1920, the shipping of the United Kingdom consisted of—

	Per cent.
Coal-burning vessels	76.0
Oil-burning vessels	16.3
Internal-combustion engined vessels	1.7
Sailing vessels	6.0

The above figures referred to merchant ships.

Speaking generally, practically all of the naval vessels now being built are oil burners. The conversion into oil burners has been checked for the moment, partially because of the high price of oil and partly because of Lord Pirrie's warning to the effect that there might be an

oil shortage in the near future and that shipowners should not be too hasty in the matter of conversion of coal to oil fuel.

Information as to oil statistics of other parts of the British Empire than the United Kingdom are being prepared and will be sent as soon as possible.

The following article, entitled: "British Motives and the World's Oil Supply," by J. T. Smith, editor of the Oil News (London), is taken from the Landmark, a newly established English publication.

When talking about the oil industry I have always noticed that well-known Americans smile at the prospect of any rivalry between the United States and Great Britain for the world's supplies of oil, or any quarrel between the two countries about the ownership or possession of the oil fields.

Among Britishers and Americans less well informed, however, there may be fear of friction and trouble under this head. One good way of avoiding such a possibility is to state the facts as far as this country is concerned, and to make it clear that the British Empire has no intention of competing with the United States in the oil industry, still less of dominating that industry and securing the best of the world's petroleum-producing areas.

Let us take first the position of the United States. That great country produces two-thirds of the world's oil, and it exports the greater part of the petrol, fuel oil, and other oil products we use. In 1918 our imports of oil rose to 5,500,000 tons, a level never reached before or since, and something like 80 per cent of that total came from the States. Great as is America's wealth in oil, its consumption there is increasing rapidly, and the United States is looking around for new sources of supply. American business men, with their usual keenness and acumen, are entering the new fields, and American capital is producing oil in Mexico, Venezuela, Colombia, and Rumania.

Next let us look at the position of Great Britain, or rather of the British Empire. In contrast with the production of the United States, which approaches 65,000,000 tons a year, the annual output of our fields is only 2,000,000 tons. While the United States is able to export oil to us and to other countries, we have to import to make up the balance of our needs, for the oil consumption of the Empire is 6,000,000 tons a year, or three times its production. Even our great oil-burning liners, such as the *Aquitania*, have to take their fuel aboard at New York. If America finds it needful to look around for new sources of supply, is it remarkable that we should feel that we have to do the same?

Moreover, oil is the lifeblood of the Empire, in a sense not appreciated by everyone. What would have happened in the World War if the British Navy had been paralyzed? Yet much paralysis almost overtook it owing to shortage of oil fuel. Lord Curzon has stated that the Grand Fleet had to restrict its exercises during the war from this cause. Mr. Walter Long, First Lord of the Admiralty, has stated that when Sir John Cadman took charge of our oil supplies "our tankers were being sunk, the navy was in a parlous condition, ships could not leave anchorage for want of oil, and the army was living on a fortnight's supply." Lord Jellicoe in his latest book has stated that "it actually became necessary at one time to issue directions that the speed of oil-burning warships was to be limited, except in cases of the greatest urgency." These instances are quoted in order to show the real peril in which the British Navy, and consequently the cause of the Allies, was placed by reason of the scarcity of fuel oil.

Never again can the Empire run such a risk. A fleet short of oil would be in the same case as a fleet short of ammunition. Lack of either would render our warships useless. And as our navy is our first and chief line of defense, and our widely scattered Empire has to be protected principally by its means, our need of adequate supplies of oil is as acute as that of any country, if not more so.

Therefore, British enterprise, side by side with American, is found in the newer oil fields of the world, ready to develop them, to secure the oil which is a vital necessity to us, but which, so far, our own territory does not produce in sufficient quantities. The United States says it needs oil. Quite so, and we do not complain that she takes bold steps to get it outside her own borders. We need oil, and we are taking similar steps. We should be guilty of gross improvidence and recklessness, we should be betraying the trust the outlying parts of the Empire place in us, and we should be steering straight for ruin, economic and political, if we did not make strong efforts to obtain large additional oil sources and to place and keep them under our control.

These facts are known to and admitted by most well-informed Americans. Such men as these, who are aware of the vast extent of the undeveloped oil fields of the world, realize our position and understand our aims. It is only from ignorance on both sides of the Atlantic that any unpleasantness is to be feared--from the ignorant Britisher who may, to use the phrase of an American writer on this subject, make "often bombastic and frequently exaggerate utterences," and from an occasionally ignorant American who, misled by such utterances, may mistake our policy of safety for a policy of grab. Fortunately, there is oil enough for both countries, and to spare, in the new fields that are being opened up throughout the world; and fortunately, too, American and British capital is in some instances, and on a very large scale, cooperating to produce and transport this oil, just as the American and British Governments cooperated with a similar object during the Great War.

No nation can monopolize the world's oil supply. It would be difficult for any nation even to control it. And once the discrepancy between British oil supplies and British oil demands is recognized, no surprise or resentment can be felt at the energetic steps the Empire is now taking to fill its requirements and obtain reserves on which it can rely in case of future need.

NOTES ON OPINIONS HELD BY ADMIRAL VON SCHEER.

Source: Reliable.

24 March, 1921.

(14060.)

HANDLING OF BATTLE CRUISERS.

Admiral Scheer was fully convinced that the principal mission of a battle cruiser was to obtain information. He states that the battle cruisers should be built with this idea in view, viz: To break through the enemy's screen and to make contact. They should be armed with guns of sufficient caliber to maintain contact and to have sufficient speed to break off engagement and rejoin the main fleet when such a course becomes necessary. He regarded the idea of battle cruisers being used to turn the enemy's column as a secondary mission. In this connection the admiral spoke of a conversation he had had with Admiral Hipper, commander of the German naval cruisers. After the battle Von Scheer had inquired of Admiral Hipper what the latter's course would have been in case Admiral Beatty had forced the cruiser fight to develop to the northward instead of the southwest. Admiral Hipper replied that he would probably have followed Admiral Beatty and doubted seriously he would have given the order to break off the engagement. In Admiral Scheer's opinion

this would have been a serious mistake, since the result would have been to separate the German battle cruisers from the main fleet to such an extent that it would have been impossible for the latter to support the cruisers. Admiral Scheer stated that it required extraordinary courage on the part of the battle cruiser commander to break off the engagement under such circumstance, but felt that the necessity for bringing the fleet into action outweighed all other considerations. He believed it was necessary this fact should be impressed not only on the commander of the battle cruiser forces, but also on the officers and even on the crews of these vessels; particularly in view of the fact that under such circumstances the crews of these ships are inclined to lose faith in their commander and to suspect him of lacking courage to attack. Special training of the battle cruiser division is therefore a necessity and every opportunity should be grasped to exercise these vessels in fleet maneuvers and battle exercises.

Admiral Scheer stated that while he disliked to criticize the English conduct in the battle, and would not care to be quoted openly, he was forced to the conclusion that Admiral Beatty could have made a much better use of the opportunity presented to him in the battle of Jutland. When Admiral Beatty steamed northward, he led the battle cruisers and the German main fleet in a direction *toward* the Grand Fleet. If Admiral Beatty had led the cruisers and German fleet to the northwest instead, it would have been possible for him to avoid engagement until nightfall. In the meantime Admiral Jellicoe would have had the opportunity to place the British main fleet between the German fleet and their base. On the morning of June 1, therefore, Admiral Jellicoe having maintained contact with his battle cruisers and destroyers during the night, would have been able to chose his position for the ensuing engagement, and would have been in the most favorable position to destroy the entire German fleet. Admiral Scheer stated that he did not know why Admiral Beatty failed to take advantage of this opportunity, particularly in view of the fact that Admiral Jellicoe had been fully informed on the strength and position of the German fleet, while, on the other hand, in the opening phases of the cruiser engagement, the Germans were not aware of the fact that the Grand Fleet was at sea.

Although it is not stated in Admiral Jellicoe's book, Admiral von Scheer said that Admiral Jellicoe had been instructed by the Admiralty to put to sea with the whole fleet and had been fully informed by the former as to the strength, disposition, and probable intentions of the German fleet. He believed that Admiral Jellicoe desired to have a whole day for the battle, and did not expect to ake contact with the Germans until the morning of June 1. He understood that Admiral Beatty had been fully informed of this plan.

Admiral von Scheer stated that when the cruisers engaged, his first intention was to steam in full speed to the support of Admiral Hipper, and even to alter course sufficiently to the westward to bring the English battle cruisers between his fire and that of Admiral Hipper. He stated that at about this time his scouts reported the presence of large quantities of smoke to the northeast, and that although the strength of these forces was not known at the time, he felt that he could not risk the possibility of these forces being part of the Grand Fleet, and therefore altered course again to the northward.

HANDLING OF BATTLE FLEET.

Admiral Scheer remarked that Jellicoe's position during the cruiser engagement was particularly unfavorable from a tactical standpoint. Admiral Jellicoe should certainly have kept to his line of bearing perpendicular to the bearing of the German main fleet. This he failed to do, probably owing to insufficient information or to inaccurate information as to the real position of the German fleet. As a result he found himself in the most unfavorable position possible, when the German fleet was sighted, and lost considerable time in bringing his ships into formation for the ensuing parallel fight.

The German fleet had practiced in maneuvers the problem of altering course through 180°. This was carried out three times under fire with remarkably few hits in the German fleet, and without any special screen precautions being taken. The admiral stated that von Hipper's destroyers had made considerable smoke, which to some extent assisted in screening this maneuver. This was particularly the case when the German fleet was turned for the third time. The destroyers accompanying the main fleet had been particularly cautioned against making smoke screen, except when specifically ordered to do so, since the admiral felt that on most occasions during an engagement such a smoke screen had more disadvantages than advantages. In the first case this maneuver was carried out while the range was approximately 10,000 meters, as von Scheer saw that otherwise he was in danger of being "capped." The second time the maneuver was made for the purpose of bringing his strongest division to the head of the line.

The admiral stated that only once did he receive the uncomfortable signal that a vessel was not able to hold her place in the line. This signal was sent by the *Markgraf*, but in spite of this fact the vessel did maintain its place in the line.

FIRE CONTROL.

The fire control, as installed on the vessels at that time, gave the most excellent results; the Germans were able to find their range rapidly and to straddle the target without loss of time. One specially good feature of the German system was shown by the fact that

although a number of ships sustained very severe injuries, the fire control functioned perfectly and without interruption. In some cases the fire-control stations were hit with 16-inch shells, which, however, failed to penetrate. In spite of the severe shocks to the station, the instruments were not damaged or put out of order. The admiral stated that in the battle training officers specially detailed for this purpose were sent around the ship to actually disconnect the fire-control circuits at various places during the battle practice. In the same way other casualties were ordered and carried out, such as derangements to the steering gear, derangements to telephones and communication systems, etc. He regarded this practice of the utmost importance in the training of the personnel for battle. Special efforts were made to protect the steering apparatus, to furnish reserve stations for steering in emergency, and to maintain communication with all steering apparatus and steering stations, the idea being that the ship must be kept in her station in the line, and that derangements to the steering gear should be considered a most serious casualty, one of the most serious which could occur.

The admiral stated that he personally made an inspection of all the ships after the battle of Jutland, and had convinced himself from this inspection that the fire control had stood up under the severe test of battle. The admiral was especially pleased with the work done in this connection with Capt. Franz, the fleet gunnery officer on his staff, and by Capt. Gluer, who was largely responsible for carrying out the fire-control developments. (The Naval Observer has personally seen the letter of commendation sent to Capt. Gluer, praising his work in this connection.) The admiral stated that probably the most effective device in fire control was the so-called "Abfeuring geräte," which was originally invented in Austria, but taken over by Krupp and developed by them during the war. The battle cruisers were fitted with this device and the results obtained in their engagement against Admiral Beatty's forces fully demonstrated the value of this invention. The second point of great importance were the stereoscopic range finders, built by the firm of Zeiss. These range finders furnished the basis of the fire-control system. The superiority of these range finders over the coincidence type, and over the Barr and Stroud in particular, has been made the subject of a special report.

The night firing of the fleet was particularly good. The fire-control arrangement permitted all guns, searchlights, and range finders to be trained on the target in a minimum of time. This was particularly demonstrated in the attacks against destroyers and the destruction of the *Black Prince* during the night of May 31 and June 1.

Admiral Scheer would have engaged the English fleet during the night, if he had been sure of their position. He found afterwards from the reports that Jellicoe's fleet was to the southwest of the German fleet, and he would probably have met them if he had continued on his original course. As the English fleet was not in formation for night engagement, he thought the chances of inflicting severe injury would be great, although he admitted that in such an engagement a large element of luck and chance would predominate.

SUBMARINES.

The admiral stated that he had disposed of submarines previous to the battle of Jutland off the entrances to the various English harbors. No submarine accompanied the fleet. Admiral Scheer stated that he regarded this disposition as an error on his part, and regretted that he had not attempted to use the submarine tactically with the fleet engagement. The admiral regarded the developments in German submarines as by far one of the greatest achievements of the war. He felt that a mistake had been made, however, by not having built more and larger submarines. He explained the mistake by saying that the Admiralty expected the war to be ended sooner, and had not taken full advantage of the capacity of the shipyards for building submarines. The building policy was also very much hindered by the attitude of the politicians who delayed too long in supporting the submarine most effectively. The result was that the large number (about 150) of small submarines were built, which required only a few months to construct. These submarines were chiefly intended for operations against merchant vessels in the English Channel and the Irish Sea. The result was, the submarine construction was much held back, and the real effectiveness of that type of submarine was not fully demonstrated by the war.

Admiral Scheer was firmly convinced that the future development of the submarines will result in a type which shall be able to remain from the base for at least eight months, to be a tactical unit of the fleet, to have sufficient armament to fight destroyers and light cruisers on the surface, and to exert a marked influence on the tactics of the future. He believes that the increase of the size and armament of these submarines will do away with the necessity for the rapid diving. As an auxiliary to the fleet, he regards them as absolutely indispensable, although he does not agree with Admiral Percy Scott in his statement that the submarine is destined to replace the battleship.

The admiral had read Admiral Sims's book with keen interest and praised it very highly. He remarked, however, that the antisubmarine devices employed in the last war would probably be of small use

for the submarine of the future. He thought that the antisubmarine devices as used could only be effective in shallow water, and that in greater depths of water, and outside of confined bodies of water, the submarine would still be a very dangerous opponent.

The admiral suggested that the geographical position of the United States would practically compel us to build as many submarines of the cruiser type as possible. He thought that a speed of 30 knots on the surface would have to be set as the lower limit. The submarine could then cruise in the half-washed condition (conning tower exposed) and make sufficient speed to accompany the fleet as a tactical unit. With these cruisers disposed on the flank, they would then be in a position to render very important service to the fleet, both as scouts and in keeping the enemy from assuming a position of tactical superiority. In considering the design of submarine, the question of bases must always be very carefully worked out. The repairs for the present day submarine necessitated numerous docks and workshops, together with the large force of trained men and mechanics. The admiral stated that for this reason he did not believe the Japanese could make good use of the previous German possessions in the Pacific as submarine bases. While this might be accomplished in some circumstances, such submarine base must be so situated that the lines of communication between the base and the source of supplies can be maintained. This problem would be particularly difficult in case the Japanese intended to establish such a base on any of the Marshall Islands or other groups in the Northern Pacific.

TORPEDOES.

The admiral stated that during the battle of Jutland they did not have trackless torpedoes, the development of the latter being completed in the year 1918. He stated however that the torpedoes, while they were seen, did force the English vessels to sheer out of line during the battle, thereby temporarily interrupting the fire. Since that time the electric torpedo has been developed in Germany, and has been successfully tested out for the size torpedo carried by submarines, that is 53 centimeters. These torpedoes have a range of 2,000 yards, with a speed of 27½ knots. The special storage batteries necessary for these torpedoes were the developments of the Accumalator Fabrik of Berlin, while the motors were developed by the firm of Siemens-Halske. The construction of the trackless torpedo (that is electric) for a range of 10,000 yards is easily possible, although the same were not built in Germany during the war, as the development came too late. Such a type, however, would have to have a diameter somewhat larger than the torpedoes carried by the submarines at present.

The admiral stated that he realized the English fleet was more or less shy of the German torpedoes and mines. (I was led to understand from an officer in the admiralty that this was the result of a special propaganda put over by the Germans to make the English believe that the developments in the mines and torpedoes had gone beyond what was actually the case. I have found since that the time that the best developments in both mines and torpedoes were made was in the year 1918, and in some cases did not come to practical use at the front. The Germans stated that the development of such mines and torpedoes takes from 2 to 3 years with the most intensive labor from the time the improvement is determined upon until the completed device is fully tested and put into service.)

SIGNALS AND RADIO.

The admiral laid great stress on the system of communications. For battle the Germans used a small set of about one-fourth to one-half kilowatt, which could be set up in protected and armored places. They also used flag signals and blinker signals to insure the message getting through. All tactical signals were repeated by all three methods. On most battleships and armored cruisers the Germans used five flag signaling stations. The large radio sets were used in battle to interfere with enemy communications. A great stress was also laid on the necessity for obtaining correct information and getting same quickly. The admiral believed the necessity for reporting contact, etc., at the earliest possible moment was so great that in order to save time the signal might be sent "in clear." Such information given to the enemy is of minor importance while the information is of the greatest importance to the commander in chief of the force reporting contact. Scouts and airplanes therefore were required to base their reports on bearings and distances relative to the main fleet. In this way errors in navigation will not result in misinformation. This was particularly emphasized in the battle of Jutland by the misinformation which Admiral Jellicoe received regarding the location of the German main fleet.

SCOUTING.

The admiral regretted very much the inability to make use of Zeppelins for scouting during the battle of Jutland. He felt that if he had been furnished with a vessel carrying airplanes, the information which they could have furnished would have been invaluable. He regards the airplane as superior to the Zeppelin for naval scouting purposes, particularly where such airplanes can be carried by a special ship. The use of airplanes on submarines he also regarded as a great step in advance for improving the value of the submarine

as a scout. The admiral had read of the intention of the United States Navy to construct a vessel for carrying airplanes to accompany the fleet; he believed this to be a step in the right direction, and as one eminently suitable to the needs of the United States Navy.

POLITICAL.

The admiral read Admiral Percy Scott's letter in the London Times of March 16, 1921, and made the following comments on the statements contained therein: It stated that "if Germany had had 100 more submarines at the beginning of the war, she would have won the war." He characterized this statement as being true. "If England had had 100 more battleships at the outbreak of the war, they would still have lost the war." The admiral characterized this statement as being erroneous. With a hundred more ships the English could have risked an attack in the North Sea and could have forced the Baltic. This would have resulted in bringing unlimited assistance to Russia at a time when it was most needed and would have permitted the English to attack the German eastern front on the flank and in the rear. The admiral was inclined to doubt that Sir Percy Scott intended all of his statements to be taken seriously in spite of the fact that he had been commenting on the submarine versus the battleship for a number of years.

The admiral stated that he hoped the world would come to realize in the course of time that the Germans were not quite such barbarians as the English propaganda had led them to believe. He stated that the treaty of Versailles had been forced on them; that they were compelled to sign in order to keep from starving. He regarded this treaty as having been signed under compulsion, and that the statement contained therein forcing Germany to acknowledge the sole responsibility for the war is a piece of extraordinary malicious doing on the part of the Allies. He felt that every effort should be made to bring out the truth of the matter and hoped that in the course of time the true history of events leading to the World War might be thoroughly known and understood. Like a large number of other Germans, he hoped that the part America would play in the future negotiations would help to build up the industrial life of central Europe. In conclusion, the admiral expressed his greatest admiration for the American Navy and the American people, and hoped that in time good relations might be established between the two countries. He stated that when that came about he trusted that the experience gained by the Geermans during the war should all be placed at the disposal of the United States.

CONDITIONS IN MEXICO.

Source: Reliable.

14 March, 1921.

(13595)

The Reticence of Gen. Obregon.

The press of February 19 reported that in the course of an address delivered in the Castle of Chapultepec on the preceding day to a party of excursionists from the west coast of the United States, Gen. Obregon stated that he "deemed it advisable to refrain from an expression of opinion concerning the state of the relations existing between the United States and Mexico pending the inauguration of Mr. Harding."

Messrs. Fall and Fletcher.

Under the caption "The fate of the relations between Mexico and the United States is in the hands of Fall and Fletcher," Universal of February 24 published a New York dispatch stating that the liquidation of the Mexican question will be confided exclusively to Messrs. Fall and Fletcher, who advocate the adoption of a "rigid policy" toward Mexico.

The Resignation of Mr. Lansing.

Universal of February 25 stated that a Universal Service dispatch from Washington reports that the resignation of Mr. Lansing from the Secretaryship of State was the result of Mr. Wilson's discovery of the former's "disloyal and dissembling" conduct in regard to Mexico in opposition to the President's established "policy of abstention." The dispatch added that Messrs. Lansing and Ostrow, the latter his private secretary, were "dismissed" from the service of the Government, and Mr. Alexander G. Kirk, "a confidential assistant of the Department of State," was assigned for duty at the embassy at Tokyo as a result of an "oral" ultimatum delivered to the Mexican ambassador at Washington during the currency of the Jenkins case.

Intervention in Retrospect.

Universal of February 24 initiated the daily publication in English and Spanish of a series of "anonymous" articles "dealing with the interventionist movement in Mexico, as inaugurated by ex-Ambassador Henry Lane Wilson and supported by numerous Americans."

Mr. Falavicini's antagonism to Messrs. Wilson and Paul Hudson has apparently inspired his publication of the articles which were "received without signature from an unknown source."

Mr. John Barrett.

The press of February 22 repeated its publication of the 12th instant of the report of the intention of Mr. Harding to nominate as ambassador to Mexico Mr. John Barrett, formerly minister at Bangkok and Director of the Pan-American Union.

The Statement of Mr. Hammond.

Excelsior of February 19 published in a conspicious position a New York dispatch reporting a statement by Mr. John Hays Hammond before the House Committee on Foreign Affairs, to the effect that "One year's commercial relations with a rehabilitated Mexico is of more importance to the United States than several years' intercourse with Russia."

The Ranger Incident.

The press of February 25 stated that the Department of Foreign Relations has received from the Mexican embassy at Washington a telegram reporting the latter's receipt from the governor of Texas of an assurance of his intention to effect the condign punishment of the promoters of the recent incident at Ranger, in the course of which several Mexican laborers were maltreated, and to accord adequate reparation for the injuries sustained by the victims. "Because of the consistently sympathetic attitude which Mr. Neff has manifested toward Mexico since his recent elevation to the governorship of his native State," the foreign office is confident of the satisfactory liquidation of the incident.

Mr. Jenkins Applies for Amparo.

Heraldo de Mexico of February 16 reported that Mr. W. C. Jenkins, formerly American consular agent at Puebla, has applied to the district judge of that State for a writ of amparo, restraining the President of the Republic and the National and Local Agrarian Commissions from proceeding to the proposed expropriation and repartition of his hacienda of San Miguel Koxtls. In conclusion, Heraldo de Mexico prophesied the rejection of Mr. Jenkins's application, inasmuch as the acts contemplated are in execution of congressional legislation.

JAPAN—NAVAL OPERATIONS.

Source: Reliable.

3 March, 1921.

(3310.)

During the fall maneuvers, 1919, the *Kongo* was declared out of control. A torpedo was supposed to have hit in the engine room, disabling engines and carrying away the rudder. The *Kongo* sheered out of formation and was taken in tow by the *Haruna*. The sea was quite choppy and running the wire cable was difficult and disagreeable wōrk.

NOTE.—Sacrificing the services of one good ship to save another disabled one would of course be a ridiculous procedure in battle, but when the national instinct to save everything is considered it is not too much to expect some brave and heroic captain to attempt such a foolhardy thing.

Gunnery.

Voice tubes alone are used for turret communication in the *Kongo* and telephones alone are used for broadside guns. Turret guns are fired by a master key in the top.

Gun pointers are all petty officers who have graduated from the gunnery school at Yokosuka.

Three-inch guns are installed on the top of the turrets for ex-caliber training.

There are 12 men in each 12-inch turret gun's crew and 9 men in each broadside gun's crew.

Torpedo Practices.

In the fall of 1919 destroyers held day torpedo practice against the *Kongo*. The approach was from both quarters, four destroyers on each quarter. The destroyers passed in column about 500 yards abeam of *Kongo* and fired their torpedoes when on *Kongo's* bow. The *Kongo* was steaming at full speed (about 27 knots) and the destroyers also at full speed (over 33 knots).

Sixteen torpedoes were fired, 14 of which were hits.

The wakes of all torpedoes were easily followed from the time they took the water throughout their entire runs.

ITALY.

Source: Reliable.

29 March, 1921.

(13812.)

From official sources it is learned that the cruiser *Libia* is to make a cruise of two years' duration. She will visit ports in Central America, pass through the Panama Canal, and visit ports on the west coast of South America, then visit San Francisco some time in the fall. She will then visit Honolulu and proceed to Asia, returning to Italy at the expiration of about two years.

In the meantime a second cruiser will be sent direct to Asiatic waters.

Hereafter it is the policy of Italy to have two cruisers stationed one in Asiatic waters and the other on the west coast of South America.

The object of this assignment is explained to be to keep in closer touch with Italians and Italian colonies in various parts of the world.

The presence on board the *Libia* of an Italian senator is entirely unofficial and without significance. The senator, whose name was not learned, hearing of the contemplated cruise of the *Libia*, asked permission of the ministry to take passage on her as a passenger for the purpose of pursuing studies of an electrical nature. Inquiry was made whether these studies were in any way connected with radio, and I was informed they were not; that they were merely of a personal nature.

FRANCE—NAVY ORDNANCE.

Source: Reliable.

26 March, 1921.

The recent work of Gen. Bourgoin on the subject of core powders will be found extremely interesting to those specializing on the subject of powder. It seems quite probable that the French will adopt powder of nitroglycerine base, at least for their very long range guns.

Referring to the old controversy, pure nitrocellulose powders, versus nitroglycerine, Gen. Charbonnier states (conference April, 1920, at Metz on the Progress of artillery material):

> However, the principal argument on which, on the eve of war, the partisans to the controversy almost exclusively concentrated their attention, that drawn from the more rapid wearing of the guns using nitroglycerine powders, must disappear completely in the light of experience in the field.

Gen. Bourgoin states that the wearing of guns is due to two principal causes, viz:

1. The general flow of the gaseous mass generated by the combustion of the charge and resulting from the movement of the projectile in the bore;

2. The flow of the gases through the annular clearance existing between the rotating bands and the surface of the bore of the gun, and resulting from the diametral expansion of the bore, under the action of the pressure of the gases arising from the combustion of the powder.

The author enlarges on these two principles and concludes that it must be admitted that the wearing effect due to the first of the two foregoing causes is more important than that due to the second. He then considers that the following is patent:

> With core powders, it is clear that the erosive effects due to the action of the second cause are very much reduced, the gaseous mass generated during the first instants of the combustion being much cooler than is the case with ordinary powders. Later on, the gases contained in the chamber undergo an intense heating, due to the combustion of the core. However, at this time, the velocity of the projectile is such that the duration of the gaseous flow becomes much reduced, this duration in fact being in the inverse ratio to the velocity of the projectile.

Under the caption "Ballistic variations of core powders," Gen. Bourgoin contrasts colloidal and core powders in respect to these variations. He refers to his previous work "Les poudres colloidales"; in this work, under the heading of "Influence of temperature," he draws the following conclusion: "Everything else remaining constant, the variations of the velocity of combustion of a powder, due to variations in its initial temperature, are only a function of the value of the temperature of inflammation of the powder under consideration."

Conclusion.

Gen. Bourgoin concludes as follows:

The results as a whole obtained up to the present time with core powders show that their use permits the realization of a remarkable ballistic progress. It is not, however, certain that the solution with which we have experimented is the best. In particular and respecting erosion, it is possible that powders of a lower average potential may appear preferable. It is equally possible that the ballistic effects thus far realized may be still further improved. In view of the theoretical considerations set forth in the latter part of this work, it seems, however, that we are already in the neighborhood of the theoretical limits.

Concerning powders having an inert envelope of acetate of cellulose, constituting perfectly progressive charges, their experimental firing is to be undertaken in its entirety.

SUBMARINE ENGINES FOR JAPAN.

Source: Reliable.

7 March, 1921.

(13479-A.)

It is the intention of the British Admiralty to abandon the propulsion of their K class submersibles by steam turbine engines and to replace these power plants by Diesel type internal-combustion engines of much greater horsepower than any now in use or under construction. Officers of the Royal Navy have this week discussed with the Sulzers the building of submarine Diesel motors of 10,000 and 12,000 horsepower. The number has not been decided upon as yet but the contract was expected to be awarded within two weeks' time.

At the present moment there are under construction at this plant for the British Admiralty two engines of 6,000 horsepower each. Both these engines are to go into one submarine.

The Sulzer representative here went on to say that both Great Britain and Japan were giving a great deal of thought and attention to the present submarine situation and laying carefully their future building plans to cover what they consider the development of submarines will be.

There are three engineer officers of the Imperial Japanese Navy stationed at Winterthur for the inspection and general supervision of the material being constructed there. These officers in conference with the Sulzers the week ending February 12, 1921, also discussed the building of submarine Diesel engines of 10,000 and 12,000 horsepower. They were advised that such engines could be built and of the prices involved. After the conference all three of

the Japanese officers proceeded immediately to Germany for the evident purpose of striving further for engines to be built at the same time in which work was progressing on the engines in Winterthur.

There is being constructed for the Imperial Japanese Navy the following list of material in Winterthur alone:

2 submarine Diesel motors of 6,000 horsepower.
1 submarine Diesel motor of 5,000 horsepower.
2 submarine Diesel motors of 3,000 horsepower each.
10 submarine Diesel motors of 15,000 horsepower each.
1 engine of 600 horsepower (type not specified).
1 engine of 500 horsepower (type not specified).

In Zurich, Switzerland, the firm of Echevis Freres are constructing for the Japanese Navy four units of 15,000 horsepower each (Sully type), steam turbines. It could not be determined just exactly what the purpose of these engines was, but it is considered they are to equip two destroyers of 30,000 horsepower each. All details of any further contracts with this firm can be definitely known and will be reported on. In the last part of 1918 the Japanese bought the licenses to construct Diesel engines of the Sulzer type in their home shops, these engines to be of no greater horsepower than 1,500. This they are now doing, but the products of the Japanese shops are found to be greatly inferior to those turned out by European workmanship.

Another interesting point, mentioned casually in connection with the Japanese officers stationed at Winterthur, was that while some of the engines were being inspected by them, they accepted several parts which were absolutely defective and which had been condemned by the company's inspectors unbeknown to them. The parts under discussion were replaced, however, by the company, as they would not permit a defective piece of machinery to leave the works.

Sometime ago these officers came to the management and insisted that absolute secrecy be maintained regarding all orders and contracts. This request the management replied to by saying that if the Japanese Navy would refrain from having representatives present during the entire construction of their orders there would be some possibility of maintaining secrecy in regard to them, but beyond that they could not be held responsible for the integrity of their employees.

There is being constructed at this plant for the French Navy one submarine engine of 6,000 horsepower, with the tentative arrangement that others will be ordered if the expected results are obtained in the trials of this engine.

It is believed that the greatest motive for imparting the above information was the prospect of future business, but that seems to

be not the only motive. Mr. Robert Sulzer, who was at one time the ambassador to the United States from Switzerland, made it quite plain through his representative that he did not like to give the benefit of his shops too liberally to the Japanese, due to the fact that he personally had no friendship for them.

SUBMARINES—GENERAL INFORMATION.

Source: Reliable.

28 March, 1921.

(14288.)

FRANCE.

Submarines, first line	17	totaling 12,603 tons.
Submarines, second line	45	totaling 17,860 tons.
Total	62	totaling 30,463 tons.

Building.

The Engineer of November 26, 1920, stated that the French naval authorities have given an order for 100 submarines.

GREAT BRITAIN.

Submarines, first line	85	totaling 58,436 tons.
Submarines, second line	61	totaling 22,493 tons.
Submarines, second line (All assigned to Canada.)	4	totaling 1,361 tons.
Fleet submarines, first line	13	totaling 24,440 tons.
Fleet submarines, second line (All assigned to Australia.)	6	totaling 7,200 tons.
Cruiser submarines	1	totaling 2,014 tons.
Monitor type submarines	3	totaling 4,800 tons.
Total	173	totaling 120,734 tons.

The Naval and Military Record of February 23, 1921, stated that the whole of the *A*, *B*, *C*, *D*, *F*, *S*, *V*, and *W* types have been sold out of service; that the *E* class up to and including *E–22* have been sold; that all of the *G* class are being sold. If this statement is based on fact, Great Britain will have, after the disposal of the *G* class, including those vessels held in the Dominion navies:

Submarines, first line	66	totaling 46,336 tons.
Submarines, second line	30	totaling 12,483 tons.
Fleet submarines, first line	13	totaling 24,440 tons.
Fleet submarines, second line	6	totaling 7,200 tons.
Monitor type submarines	3	totaling 4,800 tons.
Cruiser submarines	1	totaling 2,014 tons.
Total	119	totaling 97,273 tons.

Building.

Submarines, first line	8	totaling 7,400 tons.
Fleet submarines, first line	1	totaling 1,880 tons.
Total	9	totaling 9,280 tons.

JAPAN.

Information on submarine activities in Japan is very difficult to obtain. Definite information which the office has on file is as follows:

One submarine, first line, *No. 14*, of 900–1,200 tons, is completed. Submarines *Nos. 15* to *26*, inclusive, 12 vessels, displace a total of 4,900 tons.

The files show that submarines *Nos. 27* to *33*, inclusive, are building, but their tonnage is not known. Three of these boats are known to have been launched. Submarines *Nos. 34* to *42*, inclusive, building, are known to have a surface displacement of 896 tons each and a submerged displacement of 1,100 tons each. Two of these latter boats were launched October 26, 1920. Submarines *Nos. 43* to *51* are probably all building and are believed to displace in the neighborhood of 800 tons.

The Jiji Chimpo made a statement to the effect that the United States will not have more than 60 up-to-date undersea craft at the end of 1927. This is probably based on the consideration that nothing built earlier than our present S-boats will at that time be considered up-to-date. Such a statement as this would lead one to assume that the least formidable of the Japanese submarines will at least equal the United States S-boat. Press reports have been made from time to time to the effect that by the end of 1927 Japan will have 120 modern submarines. Taking into consideration the statement of the Jiji Chimpo, we may assume that by the end of 1927 Japan will have at least 120 submarines, most of which will be equal to or superior to our own S type.

SUBMARINE DEPOT SHIPS.

Name.	Date.	Displacement.	Speed.
GREAT BRITAIN.			
Ambrose	Purchased 1915	6,480	14.5
Titania	do	5,200	14.5
Lucia	Ex-German 1916	6,005	(?)
Pandora	Purchased 1914	4,350	11.0
Maidstone	1912	3,600	14.3
Adamant	1911	935	14.0
Alecto	1911	935	14.0
Royal Arthur	1891	7,700	15–16.0
Vulcan	Rebuilt 1908	6,620	16
Platypus	1917	3,400	15
Bonaventure	1894	4,360	20
Hebe	1893	810	19
Forth	1889	4,050	16
Rosario	1900	980	13.5
FRANCE.			
None.			
JAPAN.			
Komahashi	1913	1,230	14
Karasaki	1896. Captured 1904	6,710	13
Nagaura	1894	850	21

SUBMARINE BASES AND SCHOOLS.

Japan.

The following extracts are quoted from Imperial Ordnance No. 363, promulgated September 3, 1920:

There shall be a submarine school where naval officers and men shall be taught science and arts, and trained in the practical duties relating to submarines.

The principles of education in the submarine school shall be decided by the chief of the navy educational department with the approbation of the minister of the navy.

Students of the higher course shall be appointed by the minister of the navy from those lieutenant commanders and lieutenants who have finished the common course, or have careers corresponding thereto, to educate them in matters necessary to fit them to the important posts in submarines.

Students of the common course shall be appointed by the Minister of the Navy from the lieutenants and sublieutenants who have passed the common course of gunnery, torpedo or engineering schools, to educate them in matters to fit them as officers of submarines.

Petty officers and men shall also be trained in the submarine school.

A submarine school will be immediately established at Kure Navy Yard, which will be the first of its kind in Japan.

France.

The land school for officers of submarines at Toulon has the following functions:

To train officers in the theory and practical use of submarine weapons, electrical appliances and machinery, naval radiotelegraphy;

To train officers in the operation, maintenance and utilization of the foregone on board warships and flotillas;

To give instruction on the auxiliary apparatus used either in connection with the electrical torpedo equipment or on board ship;

To give practical instruction on submarines, gasoline engines, etc.;

To give instruction in the regulation and orders relative to the use of material enumerated above.

Courses last 10 months.

SUBMARINES—JAPAN.

Source: Reliable.

3 March, 1921.

(6452.)

Submarine *No. 34* was launched at Kure Navy Yard on February 24, 1921. It is expected this vessel will be completed about May, 1921.

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OFFICE OF NAVAL INTELLIGENCE.
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FOR CONVENIENCE IN ROUTING.

Officer.	Initials.	Date received.	Date forwarded.
Captain			
Executive Officer			
First Lieutenant			
Navigating Officer			
Gunnery Officer			
Communication Officer			
Engineer Officer			
Medical Officer			
Supply Officer			
First Division Officer			
Second Division Officer			
Third Division Officer			
Fourth Division Officer			
Fifth Division Officer			
Marine Officer			

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AVIATION—BRITISH.

Source: Reliable.

(13094.)

5 April, 1921.

The Royal Air Force is organizing an expedition to German East Africa for the purpose of photographing and surveying a lot of unexplored territory in that district.

The interesting part is that all planes will be equipped with German engines, because it is believed that where flying for long distances over entirely unexplored territory with practically no landing places the German engines offer greatest reliability. He did not know the type of plane that would be used. He further said that a camera would be used which could photograph to scale at practically all angles from the vertical. The maker or further characteristics of the camera are not known to this office to date.

BRITISH AVIATION.

Source: Reliable.

(14430.)

19 April, 1921.

At the request of the authorities of the Super-marine Co. of Southampton, a representative from this office recently inspected their plant.

The flying boat which they have just completed but have not given air tests is an amphibian known as the "Seal" and designed for the air ministry. The company found it necessary to get air ministry authority before allowing this representative to see the boat. The company's head stated that the boat was to be used as a fleet spotter to fly from a carrier, but to be able to land at sea if necessary. It carries one pilot directly in the nose of the boat. The engine, a Napier "Lion," is mounted as a tractor. The observer sits just abaft the trailing edge of the lower plane in a separate cockpit, and the gunner is next abaft him, also in a separate cockpit. The wheels of the landing gear are mounted about eighteen inches clear of the hull on each side and their main upward support is under the engine panel strut. There is a double strut at the hinge point because the wings fold aft and, when this joint is broken, there is a strut left to support both the engine panel corner and the main wing corner. The landing gear retracts upward and inboard, so that in the final position the plane of the wheel is at an angle of 45°

down and the wheel is stowed close to the hull under the root of the lower wings. This is accomplished by a single crank in the pilot's cockpit operating through gears the right and left handed screw shaft which is parallel and very close to the front spar.

The tail skid is mounted on the main rudder post and turns with it. This skid has a fin area of about half-square foot, and acts as a water rudder when the boat is taxiing. The Super-marine Co. builds their hulls completely of planking over frame members and as a single unit, and then adds a planing surface and steps which, in effect, form a double bottom for the boat and allows complete renewal if necessary without damaging the hull.

GREAT BRITAIN—BEACONS AND LIGHTS FOR THE USE OF AIRCRAFT.

Source: Reliable.

(14399.)

11 April, 1921.

The Gas Accumulator Co., whose original base office is in Sweden where several of the basic patents are now held, also has branches in England and the United States and in other parts of the world. The office in the United States is at Elizabeth, N. J.

This company has done considerable work in England for the air ministry in developing gas beacons unattended and fixed lights which are primarily designed for use of areodromes, and which are supposed to be attended and use electrical power. Of such a character is the conical light shown in the literature. This light is designed to show as an illuminated triangle from any point of the compass, the light being by reflection from four arc lights equally spaced around the top. In the extreme top of the structure is a light fixture which at present is designed to throw a beam whose divergence is 12°, and whose axis would be 5° above the horizontal. This light may be given a large variety of characteristics for distinguishing purposes, this being done by the use of the cone lights and the top light flashing or revolving; and, by the use of shafts carrying various combinations of cams; the characteristics of the light may be changed on twenty minutes' notice.

This company is also developing an illuminated and automatic wind-finding T for installation in preferred points of forced landings along standard air routes. This T is designed with a long stem of about 20 feet and short arms of about 4 feet.

BRITISH AERONAUTIC STRENGTH AND DISTRIBUTION.

Source: Reliable.

(14429.)

19 April, 1921.

Mr. Winston Churchill has stated in a speech, before the House of Commons, that the Royal Air Force has 28 full operating squadrons which are allocated as follows:

6 in Egypt and Palestine.
5 in Mesopotamia.
8 in India.
1 on the Rhine.
1 in Malta.
3 in Ireland.
3 with the Navy.
1 used for giving old pilots refresher courses.

Four more have been authorized and, when organized and equipped, will be used for reserves and replacements.

AVIATION—BRITISH.

Source: Reliable.

(13945.)

12 April, 1921.

Ten members of the unofficial British air mission to the Japanese Imperial Navy are already en route to Japan to begin immediately their duties of flying and construction instruction and of naval air-service administration training, according to Colonel, the Master of Sempill, who is chief of the mission. He is acting under his war-time rank of colonel, which is equal to the rank of captain in the Japanese Navy.

The other 20 or so members of the mission will probably leave shortly, but as most of them are ex-service men, and therefore probably subject to the reserve call-up in connection with the present strike crisis, the exact date of their departure is not yet fixed.

"The Japanese naval air service," said the Master of Sempill, "is now only about as much developed as was the British when the war broke out. Japan wishes to bring it up to date and, recognizing the high state of development our large flying boats have reached, came to this country for aid. We have a year's contract with the Japanese Government, in which we hope to do all the work the contract calls for, but it may be necessary to stay a few months longer."

The machines and engines used by the mission will be British and will include Avro FO4K machines with AR, or, as they are now called, Bentley motors of 150 and 200 to 220 horsepower. The mission will also take French Le Rhone, Siddeley Duma, six-cylinder

Wolseley Viper and Rolls Royce Eagle Eight engines, from which the Japanese will study motor construction.

Whether the Japanese Navy will go in for plane and motor construction sufficient to meet its needs or rely mainly on foreign purchases is still undecided, according to reports here.

On account of the heat of the Japanese climate, which has an injurious effect on aeroplane propellers, the mission is taking out a number of metal propellers.

This British mission will have nothing to do with Japanese military aviation, which, it is understood, is under the instruction of an official French mission, using French planes and engines.

The Master of Sempill, though only 27, is one of the chief experts on the construction of planes and engines in Great Britain. He is well known among American military and naval fliers, having been one of three members of the British official air mission which went to the United States in 1918. He resigned from the British air service in 1919, but is still a member of a number of official and semi-official aeronautical advisory commissions to the British Government. He is a great admirer of the Liberty engine and flew to Constantinople and part of the way back in 1919.

AVIATION—VICKERS-SAUNDERS BOAT SEAPLANES.

Source: Reliable.

(14428.)

19 April, 1921.

At the invitation of the company a representative of the office has inspected the plant of the Saunders Boat Co. at Cowes, Isle of Wight. This company is affiliated with the Vickers Co. in building boats.

A flying boat known as the Valencia type and an amphibian called the *Kittywake* were inspected. The Valencia is a glorified *F–5* carrying two Rolls-Royce Condor engines. The spread is 112 feet, and the plane was designed for a gross weight of 19,000 pounds and an eight-hour cruising radius. The engines did not develop 650 horsepower each as expected but only 550, so the weight was cut down from 19,000 to 17,000 by cutting down the useful load. The hull is considerably larger than the *F–5* and in cross section is almost a regular pentagon. It is built up of the Saunders Boat Co.'s patent sutured planking, which consists of two layers of thin planking glued together and then sewn. In the case of the bottom, where very smooth surface is desired, the seams are sunk and a filler used. The bottom has not so pronounced a V as the *F–5* and at the edges carries a reverse curve. This, in order to turn the wave down. No sponsons are used. There are two steps, and in building them

up the planking of the bottom is carried from forward to the end of the first step. Then the second part of the bottom is started about 8 feet inside the first step and carried to the end of the second step. The third part of the bottom is then started about the same distance inside the second step and carried to the tail.

The wing section is R. A. F. 6.

The general appearance of this flying boat is shipshape and rugged. This boat has not been delivered to the air ministry for air trials yet, although one is about completed. The Saunders Co. have no work on at the present time, due to the strike. Mr. Saunders insists that he will not arbitrate, so the strike may be of long endurance.

The *Kittywake* is a freak type amphibian, and for various causes has had no successful flights. It has a very small gap, enormous fin area, due to a double deck fuselage and to the fact that the interplane struts are mounted on the center line and are about 18 inches deep fore and aft. The wings are covered with the Saunders patent sutered planking and have a variable camber gear installed. The ailerons are mounted on supports midway between planes at the trailing edge. The plane is decidedly underpowered with two "Wasp" 160-horsepower rotary, although it was stated that it cut off the water very quickly.

This model was designed for commercial use.

GERMAN SEAPLANES.

Source: Reliable.

(5174.)

7 April, 1921.

The following table shows certain construction and performance data required by German Navy during 1918 for the types of aircraft mentioned therein:

Requirements.	Fighting seaplanes.	Scouting seaplanes.	Bombing planes.
Number of crew	1	2	2
Useful load in kilograms	280	693	1,912
Radius of action in hours	3	6	6
Number of motors	1	1	2
Horsepower	150	200	2x200
Speed in knots	92	77	72
Climb to 2,000 meters in minutes	11	17	27

Due to their inability to get off the water in normal weather in the North Sea, the German Navy was forced to give up the construction of flying boats. Pontoon seaplanes gave satisfactory per-

formance in this respect and were sufficiently strong in construction to withstand North Sea conditions.

GERMAN ARMORED AEROPLANES.

(German J airplanes—that means armored airplanes for action against Infantry.)

Source: Reliable.

(4689.)

31 March, 1921.

The principal data is contained in the following summary:

Aeg J I.—The armor of the Aeg J I consists of 5 millimeters of armor plate and extends from the tip of the aeroplane to the rear of the observer's seat. Both sides and the underside of the body is armored; the rear part of the body is covered with texture. The armament consists of a machine gun located in the observer's seat, fastened to a turning-turret which can be pointed in all directions. Besides this, there was also placed in those aeroplanes which were constructed toward the last (in the observer's seat), two stationary downward-shooting machine guns which were built into the angle about 45° to the front.

Alb J I.—The armor of the Alb J I consists of 5 millimeters of armor plate and extends from the beginning of the pilot's seat to the end of the beginning of the pilot's seat to the end of the observer's seat, on both sides and underneath; likewise both seats are armored. The motor is not protected with armor. The armament consists of one machine gun which can be pointed in all directions. It is built on a turning turret and secured with the aid of a pivot.

Alb J II.—The 5-millimeter armor of the Alb J II extends from the tip to the observer's seat so that the motor (with the exception of the cylinder head) is protected. The armament is the same as type Aeg J I.

Junk J I.—In this type the armor is contained in a trough which forms a body part, and in which the inner constructions are also fastened. The armor is raised around the motor so that the whole motor is protected. The armor extends from the tip to the center of the observer's seat. The armament is the same as Alb J I.

DUTCH FLIGHT TO THE INDIES.

Source: Reliable.

(13154.)

18 April, 1921.

Lieut. Goedhart, of the Dutch naval forces, intends to fly from Holland to the Dutch East Indies in a Berkel seaplane. He will be accompanied by Lieut. Takens, also of the naval service.

They intend to leave the Netherlands toward the middle of May, and to that effect, have already applied to the British Government for permission to land in British India. It is expected that this permission will be granted, as the machine is of an entire Dutch construction and is fitted with an engine of British manufacture.

The cost of the expedition will be defrayed by means of a public subscription; the Government has already subscribed for a part of this.

The proposed journey is divided into 14 stages: Amsterdam, Marseille, Naples, Athens, Cyprus, Bagdad, Basra, Bender Abbas, Kurrachee, Bombay, Mangalor, Colombo, Sabang, Singapore, Batavia.

The machine, a van Berkel W. B. hydromonoplane, was constructed for special use in Tropics as a reconnoitering seaplane. It has a Rolls-Royce 8 motor of 330 horsepower which drives a four-bladed propeller. The floats are of duralumin. With a full load of 950 kilos, comprising 560 kilos of fuel for seven hours' flight, a speed will be attained of 180 km. per hour.

Everything is ready for the flight, the necessary fuel has already been purchased, and it is probable that the list of subscriptions will yield the necessary amount to defray all the expenses.

AVIATION—JAPAN.

Source: Japanese press.

(14396.)

12 April, 1921.

The Tokio Asahi, a Japanese newspaper of respectability, the news of which is decently obscured in the mysteries of Japanese type, announced recently that a military aviation mission, consisting of Capt. Oseki (Aviation School), Lieut. Hiruga (balloon corps), and a subaltern as yet unnamed, is to proceed to France, Germany, and England to study the various kinds of gas and the construction of aeroplane engines. They will remain in Europe three years and will act as Government agents in the purchase of aeronautical material. Capt. Oseki goes to France, Lieut. Hiruga to England, and the unnamed one to England.

JAPAN—NAVAL AVIATION.

Source: Reliable.

(9318–G.)

30 March, 1921.

Our naval authorities will start its expansion program from this fiscal year, increasing the air forces in Yokosuka and Sasebo, and at the same time, creating new air forces at Kure and Maizuru naval stations, expecting to complete the plan of building 15 air corps, in

all, by the fiscal year 1923. On the other hand, the aerodrome at Kasumigaura will be enlarged and it expects to turn out a great many officer pilots, instructors being English ex-naval fliers. The *Hoshu*, the depot ship of the latest type of airplanes—which is in course of construction at the Yokohama dockyard at present—will be launched in June next, and naval authorities are making steady progress in completing and expanding in various directions, so our naval air forces may be said to be more or less improved compared with the condition of old days; but there will still be a great margin if the condition of our air forces be compared with those of countries in America and Europe.

American naval air forces started their activities about the time of the European war, and as the result of their devotion to progress in this direction through making a special study of aircraft and aviation in England and France, and at the same time encouraging the manufacture of aircraft, the training of pilots and the establishment of aerial investigation organs in America, she has to-day as many as 18 naval air corps in America and in its colonies. Besides these, an air corps is attached to each fleet of the Atlantic and Pacific Oceans and every man-of-war larger than a cruiser is equipped with an airplane. Wonderful progress has been made in all directions which may be seen by the following figures:

Aerial bases	18
Airships	15
Airplanes	2,100
Captive balloons	350

American authorities are not satisfied with all this equipment, and are trying to create some more new aerial bases along the Pacific Ocean, and the Board of Naval Staff is contemplating building 1,700 more airplanes and 180 airships. For instance, to show the amount expended by the American Government for naval aviation in the past five years, the total amount is a little more than $320,000,000 or about ¥650,000,000 while the Japanese navy has spent about ¥40,000,000 in the same period; if these two are compared, America is spending more than 10 times as much as Japan. From this fact you will obtain a general idea of aerial conditions in America.

The comparison of outlay in each fiscal year of America and Japan runs as follows:

AMERICAN NAVAL AVIATION EXPENDITURES.

1917	$3,587,000
1918	62,133,000
1919	220,383,000
1920	25,000,000
1921	10,000,000
Total	$321,103,000

JAPANESE NAVAL AVIATION EXPENDITURES

1917	[1] ¥450,000
1918	[1] 2,000,000
1919	[1] 270,000
1920	[1] 14,000,000
1921	[1] 23,000,000
Total	¥42,150,000

The number of airplanes, etc., in the American Navy of to-day, if compared with the present strength of naval aeronautical forces in Japan, will be as follows, and one will find how poor the Japanese naval forces are:

	America.	Japan.
Aerial bases	18	4
Airplanes	2,100	70
Airships	15	1
Balloons	350	4

It is reported that Vickers (Ltd.) has completed a number of scout planes for the Japanese Government.

Two hundred and two thousand eight hundred and six yen has been appropriated for the employment of foreign aviation experts—five of Kotokwan rank and five of Hannin rank. The yearly allowance for Kotokwan expert is ¥15,000 each, and for Hannin expert ¥12,000.

Work will be commenced shortly at Takamatsu-mura, near Omura, Nagasaki-ken, where 300,000 tsubo of land has been acquired for a new air station and flying ground for the Sasebo Naval Aviation Corps.

It is reported that the Government will establish an aerodrome at Urawa-cho, near Tokyo, on a location covering some 10,000 tsubo. It is proposed to have hotel, hospital, hangars, etc., and will be used primarily for commercial aviation.

A Zeppelin, 32 hydroplanes, and materials for a big hangar for two Zeppelins, part of German war materials allocated to Japan, arrived March 16. The airplanes will be taken to Yokosuka.

[1] It is not known how these figures are arrived at, and it is noted that the total is not correct.

The purchase of 330,000 tsubo of land in Chiba-guri, Chiba Prefecture, for the site of the Shimoshizu Military Flying School, is completed, says the Asahi. The whole expense of establishing the school is estimated at ¥700,000.

The Japanese military authorities have decided to carry out a long-distance flight between Tokorozawa and Changchun in April next, covering the distance of 1,600 miles. The participating planes will be of 280 to 300 horsepower each, with speed of 80 miles an hour, and will carry two men each.

The war office has decided to build another aerodrome at Hibarigahara, Fukushima Prefecture, near the wireless station. Construction work will start in April.

A new enterprise to be incorporated as the Aerial Transportation Co., with capital of ¥1,000,000, will soon request permission of the aerial navigation bureau of the war office for opening an aerial route. The proposed route starts at Tokyo and terminates at Fusan, Korea; they are also planning to extend the route to Manchuria and China. Hydroplanes are to be employed, and about 20 French and Italian machines are to be procured to begin with. It is proposed to carry mail, and, if it proves successful, to later carry passengers.

The nine British advisers referred to are under a three-year contract with the Mitsubishi Co.

Capt. W. L. Jordan, R. A. F., in addition to being the general adviser of the factory, is also to act in an advisory capacity to the Japanese Naval Aviation Service. He was employed in a somewhat similar position by the Sopwich Co.

The factory will not be sufficiently advanced to undertake any practical work until July or August, 1921. And the entire building construction will not be completed for at least two years.

However, it is intended to undertake the building of engines, and assembling of planes in each unit as soon as completed.

JAPAN—NAVAL AVIATION.

Source: Reliable.

(7010–E.)

19 April, 1921.

Reports published in the Hearst papers in America, originating with the London correspondent on April 19, to the effect that Japan has just purchased five million dollars' worth of airplanes from the

British Government, and that 600 airplanes had been previously sold to Japan by the British Government, are founded upon certain contracts recently made by Japanese agents in the United Kingdom.

Japan is preparing to construct seaplanes in Japan and contracts are made by the Japanese Navy with Shortt Bros. of London. Shortt Bros. have sent 30 experts to Japan to assist in the construction of seaplanes.

The probabilities are that the cost of this enterprise—transportation of men, wages, etc., would come well up to the amount mentioned as having been expended by Japan for the purpose of completed machines.

Col. Semphill, formerly with the English Air Ministry, has gone to Japan with five other air experts to give instruction in the technical branches of flying. These men are now civilians, but have the confidence of the British Air Ministry, which is fully cognizant of the work upon which they are to be engaged.

So far as is known, no recent purchases of completed machines have been made by the Japanese from the British Government.

JAPAN—AEROPLANE ENGINES.

Source: Reliable.

(13987.)

5 April, 1921.

In discussing aviation engineering work with a civilian engineer, the following points were brought out relative to experimental work under way at Farnborough:

(*a*) They are working on a two-cycle Diesel engine for airplanes which is based on the principle of the Junkers design, i. e. opposed pistons. The engine is direct drive, 900 revolutions per minute. The scavenging is accomplished by means of a Reavell scavenging turbo-blower, the weight of which is 560 pounds. It was stated that the normal weight of the scavenging installation was about 1 ton and that the Reavell design had saved about 1,300 to 1,500 pounds. This turbo-blower is similar to that being installed on some of the latest designs of Sulzer engines for submarines. The weight, however, as indicated above, has been very much reduced; this has been accomplished in part by the use of aluminum.

(*b*) *Superchargers.*—Two types of superchargers are under investigation; one is the Rateau type which utilizes the exhaust gases to compress the air. Theoretically, 24 horsepower are obtained by using the exhaust gases, but actually only about 12 horsepower are obtained. It was stated that it was possible to obtain 24 horsepower, but that if this was accomplished it was done by increasing the back pressure and was therefore more of a theoretical than an actual gain.

The head resistance of the Rateau compressor is also an important item, the net result being that the actual horsepower available in this type of installation is only about 25 to 50 per cent of the theoretical. The other type of supercharger being experimented with is a Reavell turbo-air compressor, which is driven directly off the engine. It was stated that experiments indicated that the Reavell type had a number of points of superiority over the Rateau type. It is understood that the Reavell design follows the general principles of the turbo-compressor used on two-cycle Diesel engines for scavenging purposes.

PERU—COMMUNICATIONS.

Source: Reliable.

(14391.)

5 April, 1921.

An agreement has been entered into between the Peruvian Government and the Marconi Co., of London, for the administration of the posts, telegraphs, and wireless services of Peru for a period of 25 years, entering into effect on May 1.

Foreign personnel under the Marconi administration is limited to 20 per cent of the total employees. Marconi's are to advance the requisite funds for the reorganization of the services at an interest rate of 9 per cent. It is expected that this advance in the first year will amount to £200,000 sterling. As principal remuneration for their services the Marconi Co. are to receive 5 per cent of the gross revenue plus 50 per cent of the annual surplus, if any. The services have heretofore been operated at a heavy deficit.

It is understood that Sir William Slingo, formerly a principal of the British post office and editor of Knowledge will be named as administrator here.

Mr. Godfrey Isaacs, seen in connection with the above cablegram, said that the agreement which had been concluded with the Peruvian Government gave to the Marconi Co., in addition to control of the postal and telegraphic services, the sole and exclusive usufruct of all international wireless stations within the republic and the sole and exclusive possession of all telephone services, except a few which were being run on concessions already granted by certain municipalities.

When the proposition was first made by the Peruvian Government to the company it was felt that it required a good deal of consideration, and as a result the company decided to send the best man available, Sir William Slingo, late chief of telegraphs at the G. P. O., to investigate matters on the spot.

His report was such as to induce the company without hesitation to agree to the terms stated in our dispatch from Lima. They were advised that the postal and telegraphic services had been run for many years on antiquated lines, and that, modernized and run under British organization and methods, they would prove remunerative both for the Marconi Co. and the Peruvian Government.

As to the postal service, many of the old customs will now cease. For instance, postage stamps will be on sale at the post offices instead of at lottery and tobacco shops. The Peruvian Government departments have been in the habit of using a very considerable degree of both telegraph and postal services without payment; this is a custom which will also cease, with many others which badly affected traffic receipts.

DESCRIPTION OF "HUMMER" INSTRUMENT AND INSTALLATION AS USED IN H. M. SERVICE.

Source: Reliable.

(14401.)

11 April, 1921.

The hummer is an instrument which has been devised with the object of eliminating the numerous difficulties and shortcomings of electric-bell installations.

The usual system of signaling or calling now in use generally for ships is that of electric bells and indicators which, owing to the nature of their construction, are always a source of trouble and continually occupy a skilled man's attention. This system has the disadvantage of being delicate, and an electric bell needs continual adjustment and renewal in cases where its use is considerable. The heavy sparking of a bell is generally the seat of the trouble, and the hammer being exposed constitutes another very common source of trouble. Again the installation is very subject to faults which are generally difficult to locate.

The hummer installation is very simple, and the instrument, although small and neat, is robust in construction. The whole of the disadvantages enumerated above with bell installations are overcome with the hummer installations. The hummer is worked with alternating current for preference, although it will work very satisfactorily on direct interrupted current. The noise emitted is of such a nature as to readily attract attention, whilst the instrument combines a shutter or indicator device and a push to call up another station. The instrument measures about 4 inches square and is perfectly water-tight. It can for purposes of cabin calls be designed of such an ornamental nature as to be quite in keeping with the other surroundings. Each hummer or pair of hummers are separately

fused so that in case of a fault occurring on a system it can be readily located.

The system is exceedingly reliable and its upkeep costs practically nothing, as the instruments require little or no attention, and consequently injury to cables due to connecting and disconnecting when fault locating is reduced to a minimum. When used on double calling stations the installation dispenses with the use of bells entirely besides saving all intermediate terminal boxes. Three core cable is all that is necessary between a pair of hummers, and this fact combined with the simplicity of the system greatly reduces the labor.

In the British Navy a pair of small motor alternators (one standby) is used for supplying the system, but a pair of slip rings fitted to the main generators would do equally as well.

JAPANESE RADIO STATION IN CHINA.

Source: Reliable.

(13743.)

18 March, 1921.

An observer saw the wireless plant the Japanese are erecting. The plant is being constructed in a barb-wire inclosure about one-half mile west of the village of Taihsichen, which is on Taihsichen Peninsula and about 1 mile west of the main railroad station. The one gate of the barb-wire inclosure was closely watched by a guard; at intervals along the fence were signs with these words:

NO ADMITTANCE
ARMY HEADQUARTERS TSINGTAO

It was impossible to get into the inclosure. As best as he could by means of pacing the apparent length he tried to get the height of the tower—which was lying on the ground. He measured it as 130 paces, which would make it 300 to 400 feet high. About 800 to 900 feet west of where men were digging and getting ready the bed of this tower there was some structural steel apparently to be used for a second tower, which they had not started putting together. Of course, the whole plant is still in the early stages of construction.

The erection of this wireless station seems to be kept very quiet. Some of the foreigners who have lived in Tsingtao for years seem to know nothing about it.

The Japanese wireless in Tsinan will be a doll's house compared with this new one in Tsingtao.

JAPAN—NAVAL COMMUNICATIONS.

Source: Reliable.

(12526–B.)

5 March, 1921.

A radio plant is being installed for the Japanese Government in the Marshall Islands. Definite location is not yet known. Work is being supervised by German engineers.

Equipment, Goldschmitte-Lorenz.

Two generators, each 150 kw.

One motor, 150 r. p. s., 40,000 frequency.

Height of masts, 830 feet.

JAPAN—COMMUNICATIONS.

Source: Japanese press.

(12626–B.)

5 March, 1921.

A new wireless station will be located on the coast of Taiseichen at the entrance of Kaichow Bay. Tsingtau has one wireless station located on the summit of Mount Kanwo, but it is used exclusively for official business; the new one will be for the use of the general public. The construction work has already been started.

A new radio station is to be set up in Vladivostok. The Government of the Far East republic has spent a considerable amount in order to improve the small radio station of the naval staff office inside the town. The opening of the station will be in about two months from now. The station will be able to receive dispatches from Moscow, Lyon, and Nauen.

A wireless station for the Army is to be established at Teinmaura, near Sapporo, Hokkaido. Construction work will be commenced shortly, and it is expected that the station will be completed the first of June.

JAPAN—NAVAL COMMUNICATIONS.

Source: Reliable.

(12526–B.)

5 March, 1921.

The work of enlarging the Sasebo radio station, which was commenced November last, has been completed. It has now been altered to alternate current system, with separate equipment for sending and receiving messages. The distance of communication has thus been lengthened, but how far is kept secret. The authorities say that messages can be received from the crown prince's ship at any place. On account of geographical position, Kure radio station is

not so efficient, it is to be regretted, as the Sasebo or Funabashi stations.

JAPANESE BATTLESHIPS.

Source: Reliable.

(10445.)

30 March, 1921.

Previous reports to the effect that the hull construction of the new Japanese dreadnaughts is to be along prewar lines are in error. The informant made a special investigation of the *Tosa* to determine this point and reported that it has four hulls and an outer blister. He further stated that most of the armor for this ship was assembled, that it varies in thickness, between about 3 inches and 13 inches is the maximum and the protective deck is to be about 3 inches. The armor, according to him, is pitifully poor. On numerous occasions he has seen it drilled through with a hand ratchet with no more effort than would have been required to drill mild steel.

The *Tosa* will be launched about October 1, 1921. Construction has been seriously delayed due to lack of material.

The method of building the *Kaga* appears most peculiar. The outer hull or blister is complete to the protective deck, and the protective deck is about completed. Above this point (the protective deck) almost nothing has been done: there is hardly a rib or frame in place. The ship has every appearance of being built in two distinct sections with all joints being made at the protective deck. This appearance is so marked that an American who had passed close astern on the same morning as I had, reported to me that a shed had been built and roofed over under the gantry crane, and that probably submarines were being under it. He could not be dissuaded from this view until he had gone a second time to look at the ship.

The blister is not so exaggerated as shown in the pictures of some British ships, nor is it drawn into the hull at anything like the sharp angle used by the British. So far as could be seen there was an open space of from 2 to 3 feet between the outside edge of the protective deck and the blister. The protective deck is almost flat (i. e., very little crown) to the slopes, and the angle of the slopes does not seem to be greater than in older ships.

Many large piles of armor plate, varying in thickness from 4 to 10 inches, were stored on the water front of a Kawasaki branch works, near the shipyard.

The *Kaga* has also been, and is still being, seriously delayed on account of lack of material. Her date of launching can not be definitely set.

Both of these ships are to be of 40,000 tons displacement as previously reported.

JAPAN—MODEL BASIN FITTINGS.

Source: Reliable.

(242.)

22 April, 1921.

It is understood that the Japanese are constructing a large model basin in Japan for the purpose of conducting model trials for vessels of the Japanese Navy.

In connection with this matter, Japanese representatives have taken up with British firms the question of supplying the model basin trucks or carriages for installation in this new model basin. There is one firm in Great Britain which specializes in model basin equipment, and a representative of this firm discussed with a Japanese representative the type and character of truck or carriage desired. In the course of conversation it was brought out that the Japanese propose to install six propellers on one of their models and they wanted towing carriage apparatus suitable to run a model fitted with six model propellers. The question was raised as to whether this was not unusual and the Japanese representative indicated that with the horsepower proposed to obtain the speed required in some of their capital ships (presumably battle cruisers), it was necessary to install six propellers and six shafts. As this is rather a radical departure from normal practice, it is believed that it will be of particular interest to the Bureau of Engineering and to the Bureau of Construction and Repair. This information came from a very reliable source, but I have no means of checking the accuracy of the fact that the Japanese propose to install six shafts; that they are considering the matter, and that they propose to run models of this type appears to be fairly well established.

EXPERIENCE AND PRACTICE IN MECHANICAL REDUCTION GEARS IN WARSHIPS.

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(READ AT THE SPRING MEETINGS OF THE SIXTY-FIRST SESSION OF THE INSTITUTION OF NAVAL ARCHITECTS, MARCH 26, 1920.)

(2718–A.)

The most important change in the steam machinery of warships of high speed and power during the war period was the departure from the direct-drive turbine installation to that in which the power of the turbines was transmitted to the propeller shaft through mechanical reduction gearing, and it is the object of the present paper to trace briefly this development and indicate the experience that has been gained and also the general practice of the Admiralty as

regards the details of these gears. Before the actual adoption of gearing it had long been recognized that some form of reduction device was necessary in order that the turbines and propellers should run at speeds which secure their best efficiencies, and all designs with the direct-drive installations had been of the nature of a compromise in which the maximum efficiencies of both turbines and propellers had been sacrificed in order to obtain the best overall results to meet the nature of the particular case. There were three practical methods of obtaining this reduction, viz, hydraulic, electrical, and mechanical, each possessing its peculiar merits, and in the early history it is noteworthy that the first two were more seriously considered than the third, as they did not at the time offer such difficulties in the way of manufacture and reliable transmission of high power. At the present stage in British naval practice the first two methods have not been tried, at least in connection with high-power steam machinery.

Whatever method is adopted a loss must occur between the turbines and the propeller shaft from the various causes, which need not be gone into here. Experiments have shown that with the best design of the respective devices the losses in transmission may be approximately taken as hydraulic 10 per cent, electrical 8 per cent, mechanical gearing 1½ per cent. If double reduction gear were fitted the loss with mechanical gear would be about 3 per cent.

The superior efficiency of the mechanical method has been an important factor in reaching a decision as to the type of reduction device to be adopted for naval use, and when it is combined with considerations of simplicity and reliability and the very small cost of upkeep, the combination has been considered up to the present to outweigh the advantages possessed by the other forms of transmission, such as the absence of astern turbines, and the possible maintenance of a higher turbine speed and efficiency at cruising speeds. With the design of turbine as now developed, in which special arrangements are made to permit it to maintain its efficiency to a marked extent as the speed of revolution falls, this latter advantage is to a certain extent discounted.

The endurance and reliability which are features of turbine installations are even more pronounced when geared turbines are fitted, because of the smaller and more rigid structures and moving parts. Also the larger and more efficient propellers improve the maneuvering power, and in particular the stopping effect is increased by the ease with which the larger propellers get a hold on the water. The necessary astern power (which in most warships is approximately one-third of the ahead power) can be obtained on a single velocity compounded turbine wheel without working the boilers to full

power. The smaller turbines and their more substantial construction render them less liable to distortion troubles than is the case with the larger direct-connected units.

To trace the development of mechanical gearing for marine purposes one need go back no further than 1910,[2] when Sir Charles Parsons, who was desirous of applying the steam turbine to vessels of moderate and low speed, carried out his experiments in the *Vespasian*, an old cargo steamer, experiments which have proved to be epoch-making. The success of these experiments, which were dealt with in a paper read before this institution in 1910,[2] indicated that increased efficiency could also be obtained by means of reduction gearing in ships of the classes from which the reciprocating engine had been definitely displaced by the turbine. The Admiralty made its first step in 1910, and in two torpedo-boat destroyers of that year's programme, the *Badger* and *Beaver*, gearing was fitted for part of the main turbine installations. The low-pressure turbines drove the shafts direct, but on a forward extension of the rotor spindles gear wheels were fitted which were driven through pinions by the small fast-running cruising and high-pressure turbines. The maximum horsepower transmitted through each set of gearing was about 3,000. Before these vessels were completed a further advance was made, and in 1912 it was arranged, in two torpedo-boat destroyers, the *Leonidas* and *Lucifer*, of 22,500 horsepower, for the whole power to be transmitted through two sets of gearing. The general arrangement as regards the component parts of an all-geared set adopted in these vessels has been adhered to in naval practice to the present day, viz, each set of gearing is driven by two pinions, driven, respectively, by the high-pressure and low-pressure turbine. In some installations an additional turbine for cruising has been fitted on an extension of the high-pressure spindle.

On completion of the *Leonidas* in 1914 exhaustive trials were carried out, and the results obtained as regards the efficiency of the machinery installation at all powers were very satisfactory and superior to any that had been obtained with direct-drive units. Both vessels were hurriedly put into commission in August, 1914, when experience with the running of high-powered gears was practically nil. The installations received a very severe test on service, as both boats were in commission right through the war, for the first two years being attached to the hard-worked Harwich force. Their successful running speaks volumes for the manner in which several recognized difficulties connected with the application of mechanical reduction gears for high powers had been so quickly recognized and overcome.

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[2] Trans., I. N. A., Vol. LII, p. 168.

Before the completion of the *Leonidas* and *Lucifer*, two light cruisers of 40 horsepower, viz, *Calliope* and *Champion*, were arranged to have all-geared units, but the former vessel was fitted with four shafts, and the latter with two, so it is seen that in the course of three years from the adoption of reduction gearing, and in the third order of warship so fitted, a figure of 20,000 horsepower through one set of gearing was reached. This installation ran satisfactorily on service, and as a result it was recognized that mechanical gears were suitable for the highest power required on a single propeller shaft.

The all-geared installations were not at once universally adopted for the vessels ordered on the earlier war programs, the policy in the emergency of adhering to the direct-drive type of turbine, which for several years had proved its efficiency and reliability, being followed for some time. The subject of gearing was, however, by no means ignored, and all warships ordered were fitted with cruising turbines, which were geared to the direct-drive units. Clutches were arranged to disengage these gears when running at high powers, although this procedure was not absolutely necessary. A marked gain in economy within the limits of power of the cruising turbines, and a consequent increase in the radius of action was obtained. It should also be understood that at this time the number of special "hobbing" machines required for cutting the teeth of these gears was very limited, and it would not have been possible at the time to have fitted all the war vessels ordered with the all-geared type of installations. By 1916, however, it was considered that sufficient progress had been made to warrant the complete change over, and in practically all fast warships, viz, battle cruisers (a number of which were subsequently not proceeded with) designed to transmit 36,000 horsepower through each set of gearing light cruisers, flotilla leaders, torpedo-boat destroyers, K-class submarines, and P-boats, the all-geared installation was adopted. Only in the case of a few special destroyers was the direct drive adhered to.

The following table shows the total horsepower and number of all-geared sets fitted and being fitted in warships:

Type of vessel.	S. h. p.	Number of shafts.	S. h. p. per gearing set.	Total number of gears.	Total S. h. p.
Battle cruiser	144, 000	4	36, 000	4	144, 000
Light cruisers	40, 000–80, 000	2, 4	10, 000–20, 000	50	1, 760, 000
Flotilla leaders	40, 000	2	20, 000	26	520, 000
Torpedo-boat destroyers	27, 000–30, 000	2	13, 500–15, 000	368	5, 000, 000
K-class submarines	10, 000	2	5, 000	36	180, 000
P and P. C. boats	3, 500	2	1, 750	128	224, 000
Totals				612	7, 828, 000

Of this number 556 gears are, or have been, on service, representing 6,794,000 s. h. p. The 36,000 s. h. p. sets have not yet been on service, but have run at approximately full power for a short period.

In addition there are a large number of sets of gears fitted in conjunction with cruising turbines, or as part installations, but as these gears, owing to the exigencies of war and other conditions, have not been used to their full extent, they are not included in the list.

In straight-cut gears the small number of teeth in contact, viz, one or two, imposes a limit to the speed at which high powers can be smoothly or safely transmitted, and for transmitting high power, helical gear, i.e., toothed wheels in which the teeth are inclined to the axes of the wheels, is necessary. All the gearing now in use in warships is of the entailed. The involute tooth form is invariably used, as it possesses essential advantages over other forms, the most important of which are:

(1) The teeth can be generated automatically in a machine by a straight-sided cutting tool, which can be made and ground very accurately.

(2) A variation in distance between the centers of pinion and wheel (and such variations occur in marine practice owing to the necessity for ample clearance in the high-speed bearings, and also possibly with misalignment and wear of bearings, does not affect the velocity ratio of the wheel and pinion or the smooth working of the teeth.

In the early days of turbine gearing there was not much experience available bearing on helical gearing for comparatively high powers, and in the first designs the gears were arranged with a helical angle of 20° in conjunction with a pitch normal to the line of the teeth of three-fourths inch. This design was rather noisy, and in consequence the angle in succeeding designs was increased to about 45°, which value was known to have proved satisfactory in De Laval installations of small power. The 45° design was continued until recently with generally satisfactory results, but in the meantime, with the improvements in gear-cutting processes, it had gradually been established that the noise and tremor experienced in the early installations was more due to irregularities in cutting than to the small helical angle itself. An angle of 30°, which possesses advantages in the way of efficiency and a tooth strength, in that the effective contact between the teeth is increased as compared with 45°, while the normal load on the teeth is decreased, has now been generally adopted by the Admiralty. This angle is rarely an exact number of degrees, as it is affected by the driving and change wheel mechanism of the hobbing machine, but is as near the desired angle as these details allow.

The angle of obliquity used is $14\frac{1}{2}°$, in agreement with the almost universal commercial standard developed for spur gearing with involute teeth. There is no particular virtue in this angle within limits, and the odd one-half degree, it is understood, was decided by the fact that since $14\frac{1}{2}°$ being 0.250, calculations were simplified.

Fine-pitched gears give more silent running at high speeds, and a normal pitch of seven-twelfths inch has been adopted for all but the very largest installations. While the pitch and obliquity have remained the same, the proportion between addendum, dedendum, and pitch, respectively, and the shape of the root and tip have been changed from time to time as experience of the successive designs was gained. The earliest design of hob produced a form which gave at the base of tooth only a small radius, and it was at a very early stage modified to provide a more pronounced radius at the tooth root. The rounding of the tips of the teeth was introduced to overcome the "digging in," and excessive wear of the tips which had been observed in some designs, probably due to the failure of the oil film on the surface of this position.

The question of the lubrication of the teeth is very important, and while running, an ample amount of oil, which is generally injected from the nozzles on the line of contact of the teeth, is necessary. It is usual to arrange one-fourth to three-eighths inch nozzles of about 5-inch pitch, discharging the oil under a pressure of from 5 to 10 pounds, the jet being fan-shaped, so that the whole length of the teeth is lubricated. In early practice nozzles were fitted to discharge to the line of contact both on the entering side when running ahead and also when running astern, but the latter groups are not now fitted, as experience shows they are not required, considering the short periods of astern working usual in naval vessels.

The teeth of gearing engage by line contact, but it must be appreciated that contact under a load can no more occur on a line than the load on a ball bearing can occur on a number of geometrical points. Elastic deformation of the surfaces must take place under the load, and the momentary flattening leads in each case to a surface contact. Owing to the lubrication, however, the load that can be safely sustained between two sliding surfaces in contact is decided by the pressure in the oil film between them and by the area of the film. Modern developments in the theory of lubrication seem to show that the pressure in an oil film between two surfaces varies as the thickness of the film, and that beyond a certain thickness of film no pressure is maintained. For a given thickness of film it will extend over an area practically proportional to the square root of the radius of curvature of the surface, and this area may be regarded as the virtual area of tooth contact. The radius of curvature may be taken on the pinion teeth alone, as the gear-wheel teeth are sensibly flat, and as

this average radius of curvature of the tooth form varies as the pitch diameter of the pinion, an empirical rule depending to a certain extent on the helical angle for the allowable tooth pressure $p=K\sqrt{D}$, where K is constant, is obtained, p being the intensity of pressure in pounds per inch of axial length. The values of K for a large number of cases are shown and are seen to be round about 200 to 225 in the majority of cases. The pressures obtained per inch width of face vary from 700 to 1,030 in the high-powered installations at the nominal full power.

A difficulty in the early history of gear cutting was caused by the fact that the master worm wheel which rotated the gear wheel during the cutting operation was not quite accurate; this difficulty led to an addition to the machines of a "creep" mechanism, by means of which the job is rotated at a higher speed than the table. Any recurring error in the worm wheel which might be copied on the job being cut is, with such a machine, no longer in the direction of the axis, but is distributed in helices on the gear wheel or pinion. With improvements in the accuracy of this master worm wheel and the maintenance of the machine in good condition with all parts well lubricated during a cutting operation, the advantage derived from the use of the creep has been lessened, and from a list of 10 firms that have cut the majority of the naval gears it is a matter of interest that on the wheel machines only 4, and on the pinion machines 6, firms use creep. As regards the tendency of the worm wheel to wear out of true, inquiry has shown that in a number of machines that have been working constantly for at least three years the accuracy has not been affected.

Experience indicates that extreme accuracy of tooth-cutting and the maintenance of accurate alignment are necessary to the successful operation of any mechanical reduction gear. In all naval work the turbine spindles, pinions, and gear wheels are supported on rigid bearings, and the alignment is determined by accurate machine work in boring the gear housings, and fitting the bearings. No gears of the floating frame type, in which the pinions and bearings are mounted in a frame supported on a flexible I-beam, which automatically maintains its correct position after being accurately aligned in the first place, have been fitted, and judging from the general experience obtained over a number of years it appears that any advantage likely to accrue from the adoption of such a system would be outweighed by its disadvantages. The important feature that must be borne in mind is that in all calculations of tooth stress and dimensions of the surfaces required between the working faces of the teeth, the design and construction should be such that the total tooth pressure is uniformly distributed over the whole width of the tooth face, but various conditions arise in practice which tend to upset this

working. Misalignment is one cause and it emphasizes the special care necessary in this particular. In some designs the turbines and gear cases were carried on separate supports built up from the hull structure. The turbines and gear cases as separate units are of stiff construction, and under working conditions do not suffer distortion. The possibility of relation motion between the turbines and gear case existed; and, although nearly all vessels so constructed experienced no troubles with the gearing, yet in two torpedo-boat destroyers the gear became very noisy, and wear took place on the teeth. Although no actual breakdown occurred, the defects were objectionable, and the gears were removed for dressing up. When the alignment was again tested it was conclusively proved that relative displacement of the gear case and turbines had actually taken place. In later designs this movement is not possible, as the after ends of the turbines are now supported on stiff extensions of the gear case, the whole installation forming a rigid unit.

Owing to the action between the teeth when transmitting power, the pinion and wheel tend to increase their distance between centers. This, as pointed out, does not affect the smooth or regular action of involute teeth, but the line of centers through turbine and pinion should be free to remain parallel with the axis of the wheel, and the clearances in all the bearings should permit of this, otherwise misalignment will take place. Another cause that arises is that due to the deflection of the pinions and wheel, which in each case is of a double nature, viz: that due to the twist and that due to the bending. These points should not be overlooked in any design, but with the proportions brought about by other considerations, these deflections are not such as materially to affect the working of a correctly constructed gear.

Apart from the above causes it has been observed in many gears that the load has not been distributed over the whole length of the teeth, an undesirable concentration of pressure having taken place on a portion of the length. This does not appear to be due to distortion under the twisting moment, as it has been observed at either of the ends of the pinion elements, and it has been attributed rather to an error in manufacture, the helical angle of the pinion element being slightly different from that of the gear wheel. It is necessary that particular attention should be paid to this important point right through the construction of gears, as many makers appear to be satisfied to assume that as this helical angle is a function of the machine mechanism, the angle will necessarily be correct, or at least within a microscopic difference. Unfortunately, in some cases, this has been found to be far from true, especially in the case of pinions, and it points to some torsional movement of the job during the cut. This may occur through strain of the driving mechanism when tak-

ing a heavy cut, or a slight slow slip of the pinion in the chuck of the machine. It appears better that nothing should be left to chance, and that the angle should be tested after the gear is cut and before the work is removed from the machine either by again running the hob through it so as just to touch the surface, or by a separate checking arrangement.

It is also to be noticed that even with an accurate helical angle of the components of a gear and correct alignment, perfect contact is not necessarily obtained, as owing to the hob receiving a certain feed for each revolution of the wheel or pinion being cut, the working face of the tooth is more in the nature of a number of facets than a fair curve. This is accentuated when the teeth are shaped in a single operation, as favoured by the majority of gear cutters, and the faces are often observed to have a torn or scored appearance in the direction of the cut. It is a question, therefore, both from the point of view of correcting small errors in helical angle and the formation of fairer surfaces, whether a slight finishing cut should be taken and then the hob run through again in a different relative position to that in which the main cut was taken so as to remove the high points between the facets and to smooth the surfaces that have been torn, due to the hardness of the material when taking the primary cut.

The speed of the teeth has an effect on the running and durability of the gear, owing to the intensity of shock on them. With the modern methods of cutting and manufacture and with forged materials, the limits formerly used with spur gearing have been much exceeded, and there is ample experience to prove that satisfactory working can be obtained with speeds of 140 foot-seconds, and there seems no reason to assume that this speed could not be sensibly exceeded. The effect of the rise of temperature on the teeth, due to the rubbing contact when off the pitch line, has not appeared to be sufficient to affect the working in a well-lubricated gear. In general, a gearing ratio of 8 or 9 to 1 is not exceeded in naval practice of moderate and high power.

Typical gear ratios from naval practice are given in the following table:

Type.	S. h. p. pinion.		Ratio of turbine revolutions to propeller revolutions.	
	H. P.	L. P.	H. P.	L. P.
Battle cruiser	17, 500	18, 500	7. 1	5. 2
Light cruiser	8, 500	11, 500	9. 3	5. 1
Flotilla leader	9, 000	11, 000	8. 3	5. 0
Torpedo-boat destroyer	6, 250	7, 250	8. 5	6. 5
K-boat	2, 250	2, 250	8. 7	7. 7
P-boat	875	875	11. 6	11. 6

In the design of a reduction gear the question of relative axial movement between the pinion and the gear wheel is of importance. This movement takes place due to the necessity of the pinion requiring to adapt itself so that the load on each element should be the same. This movement is not difficult to cater for in a single reduction, as the gear wheel, being fixed by the thrust block, it is only necessary to provide an expansion coupling between pinion and turbine spindle, and allow clearance between the ends of the pinion elements and the adjacent bearings. The problem is, however, more difficult in the case of certain designs of double reduction gear, as relative movement is required between the shaft gear wheel and the intermediate reduction element, and also between the latter and the pinion. The intermediate reduction wheel being a heavy fitting, for it carries four working faces, two of fairly large diameter and two small, possesses considerably more inertia than a pinion, and in the vent of fitting such a gear in warships this aspect of the problem would require careful consideration.

To avoid the same teeth of pinion and gear wheel coming in contact revolution after revolution, and also to insure uniform wear, it is usual to fix the gearing ratio so that it is not only not a whole number, but the number of teeth in the wheel and pinion have no factor in common.

In addition to the two cases of trouble and gearing previously referred to, there have been a few cases of failure due to the fracture of pinion teeth at their ends. This is the weakest part of the teeth, as no support is given on one side of the portion receiving the pressure. Chamfering off the ends of the pinion teeth prevents the load coming on the extremity. Fracture of these teeth might be expected with an error in the helical angle of the components, leading to an excessive intensity of pressure at one end of an element, but cases have occurred where a fracture has taken place, and yet an examination of the gears has shown the pressure to be uniformly distributed along the length of the tooth. Seeing that under these conditions the tooth stress is low, other reasons have been sought for these failures. Of the six cases, four occurred during the contractors' trials, one occurred after two and a half months, and the other after seven months' service. In neither of the latter two cases has the defective gear been removed from the vessel, and they are still running with the broken teeth having been trimmed off and the gears dressed up. Defective material has been indicated as the probable cause of this defect, but although careful analysis has been made, in no cases have the results indicated anything seriously wrong with the metal, although it has been noted in one or two cases that the structure has not been the best possible. It should be noted that before the vessel has been accepted by the Admiralty the teeth of the H. P.

pinion in a destroyer have received their full load about a million times, and in the case of a light cruiser about 600,000 times, and the causes of failure referred to may, in the absence of any other reasonable cause, be attributed to a fatigue at a flaw developed in the alloy during its manufacture.

The type of steel used for pinions must possess several essential qualities, viz. (*a*) strength to resist permanent deformation under stress; (*b*) stiffness, to avoid undue whip or elastic deformation when running; (*c*) surface harness to prevent wear; (*d*) nonbrittleness, so that it can stand shocks and blows.

In addition, there is the important fact that the teeth have to be cut after tempering the material, as otherwise distortion of the teeth would arise.

The specification governing the materials for gear forgings for naval service and their treatment are given in the Appendix.

It appears that finality in respect to the most suitable material for pinions has been reached, and it is possible in future that the use of chrome-nickel steel with a low percentage of chromium, say from 0.3 to 0.5 per cent, will receive consideration for these details in place of the nickel steel now employed. It is known that the effect of very slight variations in the percentage of the constituents, variations that may occur in different parts of the forging under the best conditions, are sufficient to completely upset the anticipated results of the heat treatment, but judging generally from experience with service gears there does not seem any pressing reason to depart from present practice.

Before a vessel is accepted by the Admiralty the gears are opened up after the full-power trials, and all surfaces, and especially the roots and ends of the teeth, scrupulously examined with a powerful magnifying glass to ascertain whether there are any flaws or signs of cracking present that may lead to subsequent fatigue failures.

During the early running of gears on service there is often observed on the faces of the teeth an action known as pitting. Small flakes of metal are detached from the otherwise smooth surface of the teeth, leaving small hollow depressions, varying in size from a small speck to as large as one-eighth inch diameter, and 15 to 30 thousandths of an inch deep. They are most common in the region of the pitch line, where only rolling action occurs. It is difficult to account entirely for this pitting. A lack of homogeneity in the material at the tooth surface (and careful analysis by microphotography does reveal this), or crushing of minute high spots causing failure of small sections of the metal of these high spots are possible reasons for this pitting. This action in the vicinity of the pitch line may possibly be due to the metallic contact recurring there as a result of the failure of the oil film, observing that the rubbing velocity of

the teeth is gradually reduced from a maximum at the tips and root to zero at the pitch line. In any case the action is not found to be deleterious to the smooth and efficient working, and it usually ceases after a short time. Deformation leading to scoring and wear of the teeth is a serious, but fortunately rare, fault in naval gears, and the only cases on service in which such wear has taken place were those previously referred to as having suffered from misalignment and in the case of a P-boat referred to later. It has, however, taken place during the contractors' trials of at least two ships, involving removal with either recutting to a modified form of tooth, necessitated by the wear, or the substitution of another gear. The working is seriously prejudiced by such wear, as, apart from the reduction of life involved, it is accompanied by excessive noise and heavy "shivering" of the gear, which transmits its effects to the turbines and subsidiary fittings, causing failure of lubricating pipes, etc. Once deformation is present, or sets in, the whole face of the tooth is affected, even at the pitch line, where the contact is more of a rolling nature, as, due to the wear of the faces of the teeth, there is a tendency for the points of the harder pinion teeth to dig in and tear across the flank of the tooth when disengaging, the concentration of the load on the pitch line then being so great as to cause elastic deformation and a continuation of the digging in, failure of the oil film takes place, and the whole surface of the tooth is scraped away. In the two cases referred to, during trials some slight error in the tooth form was considered to have been the cause in initiating the action, being then accentuated by the consequent failure of the oil film.

From this same point of view any grinding in of the gears, apart from the practical difficulties of carrying it out, appears to be undesirable on theoretical grounds, and as it causes wear of the flanks and faces of the teeth it leads to an undue concentration of pressure on the pitch line. A few service gears have been subjected to this operation, but is not now being applied.

Another usual feature in gears during their early life is for a minor action of the above nature to take place, the teeth at the regions of higher pressure being rubbed away or caused to flow so that a sharp razorlike edge or small "rag" is formed on the points of the teeth. It can be stated as a general principle, however, that once these harder regions of pressure have been "beaten down" the load is more uniformly distributed and the action does not continue, nor is the working of the gear affected.

With the oils used for naval service corrosion of the gears does not take place. Some slight admixture of water with the oil always takes place, chiefly due to steam from the turbine glands entering the adjacent bearings, but beyond a rusting effect of the wheels and pinions generally the working faces are not affected. It has been

suggested that in the early life of a gear it might be advisable to use an oil carrying proportion of graphite, from the point of view that under the working pressure the microscopic irregularities in the surfaces would be filled by small particles, and in a short time highly polished surfaces obtained. As the lubricating system of gearing is, however, common with that of the turbine installation, it has not been generally adopted, but recently this is being tried in two torpedo-boat destroyers.

From the general experience so far gained there is no reason to suppose that gearing should not have a long life, provided that a reasonable amount of care be exercised in running an installation that has successfully passed through its specified trials. Gauges are supplied for testing the wear of the teeth, but as in practically all cases the wear is inconsiderable, it is not usual to keep records of this.

Such cases of failure having been mentioned, it is of interest to sum up as a whole and see how far the anticipation of reliability has been substantiated. Of the 556 sets of all-geared installations on service in the navy, some extending up to nearly six years, it has only been necessary to actually remove three for refit in the misalignment cases referred to, and here it must be emphasized that no actual breakdown occurred, and the gears, after dressing up and in one case new pinions being supplied, were subsequently reutilized. Also, in the case of one of the P-boats, the gears had to be removed on service owing to their becoming noisy and wearing slightly. The wheels were "dressed up" and new pinions fitted. Of the cases of fractured teeth, which are two in number, the gears were not removed, the broken or cracked portions being removed and damaged teeth smoothed up. In another case a breakdown occurred through a seven-eighths-inch bolt, inadvertently left in the gear case, passing between pinion and wheel and damaging a portion of the length. This set was replaced by a spare, but the old wheel after cleaning up is retained as a spare with 3 inches of the tooth face out of 40 inches total missing. The failures on trials have been four with fractured teeth and two with excessive wear, and it must be admitted that these figures are most satisfactory when it is remembered that the development and experience of these gears for high powers was, except for a few cases, confined to warships.

Apart from the reduction in size of the turbines which led to more rigid and reliable units, there is a great decrease in the quantity of turbine blading required, and at one period of the war, owing to the enormous demands for copper in the munitions, etc., service generally, any question which lessened the demand for the supply of this metal or its alloys was of importance, and the reduction in blading required owing to the adoption of the all-geared installations re-

duced the strain on the blading makers and avoided any possible delay in the construction of the warships from this cause.

Some typical figures showing this are: In a direct-driven torpedo-boat destroyer of 25,000 s. h. p. the total length of blading sections fitted is approximately 70,000 feet, as compared with 7.720 feet, in an all-geared installation of 27,000 s. h. p. As, however, the section of the blading in the all-geared type is heavier, the weight is not in the same proportion, being as 4 to 8½ tons. Apart from the saving of fuel, and a slight reduction in boilers owing to the gain in economy, there is no great saving of overall weight in the all-geared installation, the gearing being a heavy fitting and helping to outweigh any saving obtained on turbines and boilers. Some typical weights are:

	S. H. P.	Total weight (tons).	S. H. P. per ton.
Torpedo-boat destroyer:			
Direct driven	25,000	372	67.5
All-geared	27,000	393	69.0
Flotilla leader:			
Direct driven	36,000	554	65.0
All-geared	40,000	615	65.0

The question of economy, which was one of the primary reasons for fitting reduction gearings, has been substantiated. Generally speaking, the advantages of the present all-geared installations over the most recent direct-drive types fitted are shown in the table, the figures being based on the increase of the radius of action for the same quantity of fuel under service conditions, and therefore taking into account the gain in economy in the turbines and the effect of an increase in propulsive efficiency.

Percentage increased in efficiency of geared installations.

	One-fifth power.	Two-fifths to three-fifths power.	Full power.
Light cruisers	16.5	16.3	16.1
Flotilla leaders	20.0	20.0	[1] 17.0
Torpedo-boat destroyers	20.0	20.0	[1] 20.0

[1] At 30 knots.

The initial steam conditions in the cases of the all-geared and direct-drive installations are the same in each case.

It should also be noted in this particular that superheated steam has not up to the present been used in any all-geared turbine instal-

lation in the naval service, but with the advantages to be gained from the possible adoption in the future the smaller rigid turbines used would conceivably be more adapted for superheat than the larger direct-drive units.

The author is indebted to Messrs. Thornycroft for the photographs of the gearing of a torpedo-boat destroyer and a flotilla leader, illustrating this paper.

BRAZILIAN COLONIZATION.

Source: Reliable.

(6912.)

25 March, 1921.

In the States of Santa Catharina and Rio Grande do Sul, constituting the southern part of Brazil, there are estimated to be 500,000 Italians and 400,000 Germans.

Thse people have mostly been settled in colonies, each of which is composed of one nationality, and this fact has operated to keep more fully alive the former nationality of the settlers than would have been the case had they been scattered among the native Brazilian population.

The Germans immigrated mostly in the period from 1848 to 1900. The Italians have come largely in the present century.

The German element has been very prominent in the States mentioned. Besides being settled on the land, Germans have gained much control of the trade and business of the sections where they live, have gone into banking, and have much interest politically.

Since the outbreak of the European war they have mostly acquired Brazilian citizenship and have been at some pains to announce themselves as real Brazilians, but they still form a community apart, use the German language exclusively among themselves, and hold aloof from the native population.

There has been but little intermarriage between Germans and Brazilians. To a great extent this is due to the aversion to the Negro blood in the Brazilians and is partly due to religious feeling, as it is noticed that there has been more intermarriage among Catholic Germans than among Lutherans.

As a body the Germans are thrifty, hard working, and sturdy. The intelligence of those in the agricultural colonies is not, however, very high and they have usually been swayed by the strong minds among the commercial men of the cities.

Opinion is conflicting as to the general mental attitude of the German element since the war. One prominent man of German extraction who has visited Germany since the peace, declared that the Germans of Brazil do not yet realize how broken Germany is. Others told me that the Germans have taken the defeat of the father-

land philosophically and have no rancor. Many told me that the German firms had desired to go back to German imports, but on account of difficulties of deliveries are again placing orders with American, British, and French firms.

In general the feeling seems to be that the German element is not to be feared, that they are not opposed to the Federal Government, but that they are working for the prosperity of their States, which means, of course, their own prosperity.

There is one change brought about by the defeat of Germany which will probably result in a different attitude of the German element toward the fatherland and toward Brazil. Before the World War German gunboats regularly visited these regions, and by direct contact with the leading Germans kept the Pan-German spirit glowing at a high heat. This one feature was probably responsible for much of the former German truculence.

That their work is successful is shown by the fact that the southern States have been the most prosperous of the Republic and are constantly making great strides in material progress. At present they are feeling the business depression which covers all South America, but do not seem to be as heavily hit as the larger centers farther north.

CHINA—BRITISH ARMY AND NAVY INTELLIGENCE.

Source: Reliable.

(8097.)

4 March, 1921.

The British Legation in Peking has for years been very antimilitary; with Sir John Jordan, an ex-consul, as minister, the policy of the legation was promiscuously against assisting in any way the naval attaché or military attaché attached to the British Legation.

In 1919 the post of naval attaché was abolished by the British Legation and the naval attaché, Commander G. I. Hutton, R. N., was transferred to Shanghai as British naval port officer with orders to keep the Admiralty and Commander in chief of British Asiatic fleet informed regards important happenings in the Far East.

The British military attaché in Peking is a lieutenant colonel of infantry. The real intelligence service for the army is done, however, by a lieutenant colonel stationed in Tientsin who talks Mandarin Chinese and by another lieutenant colonel stationed in Hongkong who talks Cantonese. These officers, whom I know very well, have intimated to me that the head of the British military intelligence service in Japan is a man named Winder, the manager of Vickers for Japan; this of course can be best substantiated by ———. They say that they do not believe their attachés in Japan

are in a position to obtain any information, in fact do not believe they should be required to.

In 1920 Commander Hutton resigned from the service and his post has been filled by a Royal Marine officer. The head of all British naval intelligence is a Royal Marine officer named Maj. Huntingford who is on the staff of the British commander in chief of the Asiatic fleet.

In Hongkong he is assisted by a lieutenant, R. N., who is on shore duty there and travels extensively through the provinces of Kwangtung, Kwangsi, and Yunnan.

Huntingford travels extensively through the maritime province of China and also into the interior; he is at present en route to Australia to investigate the proper measures for dealing with the bitter anti-Japanese feeling existing to-day in Australasia. Huntingford is trained for intelligence duty and has apparently a good deal of money at his disposal for such work.

CHINA—EXTRATERRITORIALITY IN CHINA.

Source: Reliable.

(14378.)

8 March, 1921.

A good many prominent Chinese are making every effort to force the Chinese Government to demand from foreign nations the abolition of extraterritoriality in China.

The treatment accorded the Russians in China by the Chinese in the past few months is a good example of what would happen if the privilege of extraterritoriality was denied to Americans.

CHINA—COMMERCIAL.

Source: Reliable.

(4740–B.)

25 March, 1921.

A German business man told me in the course of conversation that he had learned from a Japanese business man that the Japanese boats secured a rebate of 50 per cent on harbor and wharfage dues in Tsingtao. He did not know, however, in what way it was managed; but he thought it was certain that foreign ships paid twice as much as the Japanese.

CONDITIONS AT HARBIN, MANCHURIA.

Source: Reliable.

(12680–B.)

There is much talk of what may happen to the Jews and many expect massacres. The Japanese publicity bureau frequently points

out the possibility of this. The Jews themselves seem to fear something and a curious incident related to me is a good indication of it. A Russian who was in a Japanese shop in the Pristan told a mutual friend that while in the shop four Jews, not together, came in and purchased Russian orthodox crosses, the kind that every Russian orthodox wears around his neck constantly. My friend informs me that his informant is a reliable man and that there is no reason to doubt the truth of the statement. Another Russian also informed me that the Jews are purchasing Russian ikons and hanging them in the rooms of their apartments, as the orthodox Russians do.

The new revolution in Russia has caused Russian paper money (Romanoff and Kerensky) to rise enormously in value on the local bourse. It seems to have had no effect on the Siberian money.

Ataman Semenoff.—A letter received to-day from one of Semenoff's lieutenants, and intended for publication in the Russian Daily News, throws an interesting light on Ataman Semenoff's aims. While the letter emanates direct from Semenoff's headquarters at Port Arthur, it bears the date of Vladivostok, February 21.

It says:

The most remarkable fact of late is without doubt the growth of sympathy toward Ataman Semenoff among the socialists of the right. A well-known member of the cooperative organizations here, a social-revolutionary, said to your correspondent:

"The names of generals who are recommended to be the leaders in the struggle against the communists are insignificant and mean nothing to us—they are all old bureaucrats of the imperial court, alien to the people and their aspirations; they are confirmed monarchists, and we shall never put faith in the oaths they take toward the democracy.

"As to Ataman Semenoff, he is a democrat, in spite of all that his adversaries say. He is a common Cossack, never favored by the old régime, and he does not care at all whether a monarchy will be restored or a democratic republic established after the fall of bolshevist rule."

This is not a stray opinion—many social revolutionaries of the right wing say the same.

Semenoff's attitude toward Japan is shown in the following, from the same report:

The policy of Japan at Vladivostok and in all the maritime province is continuing to be of a dual and hesitating sort.

There is no impression that Japan is sincerely willing to aid one or the other side or any political group. In every action of Japan one notices only an intention to enlarge the disorganization, to make the political and social entanglement of ideas more complicated and finally to create insufficient conditions of living for the Russians in the Far East independently of their political affiliations.

No person, no party, no group, in one word, nobody at all can be sure that Japan, if supporting him to-day, will not to-morrow deliver him up to the opposite party or adversary, provided it is to her interest. In case of such treachery Japan and her representatives can easily find a number of excuses.

The diplomats will accuse the military circles and vice versa, and finally, owing to the absence of a guilty one, only the Russians will suffer.

This sort of action is creating absolute distrust toward every step of Japan and compelling even the most conservative groups in Vladivostok to turn away from her.

British political circles at Vladivostok believe that in case of war between Japan and soviet Russia Japan will not limit the war zone to the maritime province, but will be compelled firstly to dispatch troops through Manchuria into Trans-Baikalia. This will serve two purposes; first, to encircle the reds in a sack northward from the maritime province, and, second, secure the export of raw material from Mongolia.

In this connection it should be noted that at the present time there are huge quantities of raw materials amassed in Mongolia. During the last three years these materials have not been exported from Mongolia at all, and therefore that country is attracting the attention of the English.

The report also gives the approximate forces of the bolsheviks in the maritime province as follows:

(1) A division of the people's guard, 2,000 men, only 800 being armed.

(2) Detachments of town and fortress militia, about 700 men.

(3) The escort of the commander of the troops.

(4) At Olga a battery numbering 250 men.

(5) At Onuchino a guard numbering 150 men.

Moreover, within the Ivanovka region a detachment of Korff (Baron Korff?) is operating. Its numbers are unknown, but rumor gives it variously as 150 and up to 7,000 men.

In this region there is also Shevchenko's band, numbering some 800 men. In the Chernigovka region Gurno's band (numbers unknown).

A band of so-called "Russian Hunghutzs" is also operating in this region, under the command of Smirnoff. Their numbers are not known.

These bands are not registered by the Red command and do not recognize the authority.

All the troops, except the Rakitin battalion, have been moved from Habarovsk out into the line between Habarovsk and Iman. They number approximately 32,000, with 12 guns and 32 machine guns. They include the troops of the Fifth Soviet Division, brought out from soviet Russia, and of the Second Amur Division, under the general command of Teterin-Petroff, a former sergeant.

The commanders of brigades are: Col. Kazandji, a former officer of the imperial army, and Serosheff, a "partisan," or guerilla.

The Chinese Eastern Railway.—Mr. Ostroumoff, the new manager of the C. E. R., in a visit to the railway workshops, addressed the workmen and told them the following facts with regard to the operation of the railway:

In 1914 there were 1,800 workmen in the shops; at present 3,100. In 1914 the salaries were 800,000 gold rubles; at present 2,600,000.

In 1916 the foundry turned out 650 puds of metal; at present 460. In 1916 the smithy handled 206 puds; at present, 180. The sawmill handled in 1916 400,000 square feet of lumber; at present, 240,000. Formerly it took 290 days to overhaul the simplest locomotive; at present 590. The minimum time for overhauling was 91 days as compared with 150 at present. The average time for the overhauling of a locomotive was 200 days; at present, 300. The figures made a deep impression on the audience and were listened to with keen interest.

Mass at cathedral.—A mass was held on the 10th at the Russian cathedral in the New Town to pray for the restoration of peace in Russia. When the victims of terrorism were mentioned, the scenes among those present were touching.

The bolshevik paper Vpered and the United Conference advised against attending the mass, and it was rumored that troubles might take place, as was the case at a similar mass last summer. In spite of this many of the railway workmen attended. A strong guard of Chinese police was set up around the cathedral.

A large crowd gathered in front of the "Russky Golos," opposite the cathedral, to learn the latest news. Some Pristan pro-Bolsheviks attempted to deny the probability of the events in Russia, but were received with such hostility that they quickly withdrew.

The Japanese colony in Harbin.—A recent registration shows that the number of Japanese subjects in Harbin at the present time who have the right to vote in the council of the Japanese Society is 570. The figure last year was 300.

Elections to the council of the Japanese Society are set for the 23d of March.

Overland transportation.—In spite of the increased exportation of grain to the South, the increased prices and the expected reduction of freight rates, activity in the grain regions on the western line of the railway is very weak. The quantity brought in is insignificant. Anda and Mangow stations show no activity at all.

At the same time transportation of grain to Changchun overland, by Chinese carts, is as active as in the winter months.

Manchurian farmers are hastening to take advantage of the short period of time preceding the spring break-up to sell their stocks at Changchun at a much better price than at the railway stations.

Experts believe that the railway this year will again have to contend with serious complications if they do not at once begin the competition with overland transportation, which is taking from the railroad one of the chief sources of income—the transportation of grain for export.

ANTIBOLSHEVIK OPERATIONS IN MONGOLIA.

Source: Reliable.

(11461–B.)

17 March, 1921.

With the capture of Urga, the capital city of Outer Mongolia, on 2 February by antibolshevik forces under the command of Baron Ungern, the Chinese Republic has lost suzerainty over a territory two-thirds the size of the original 18 Provinces of China and one-fourth the size of all Chinese territory.

The proximity of Mongolia to the northern boundary of Chihli Province can best be estimated by the fact that during normal weather conditions the southernmost boundary of Mongolia can be reached from Kalgan in a day's automobile journey, and Urga itself is only a three days' motor trip from Kalgan or four days from Peking.

Exactly how much the Japanese are implicated in the loss of Mongolia to China can not be definitely stated; but, on the other hand, it is correct to assert that at no time did Japan oppose the attack on Urga by Ungern's forces.

In fact in Maj. Dockray's report he states that about 70 Japanese were enlisted in Ungern's attacking forces.

(Maj. Dockray is a retired English army officer employed by the Chinese National Wireless Co. to erect the radio station at Urga; statements made by him can be considered accurate.)

Independent Mongolia is bound to play a prominent rôle in the future affairs of the Far East, and Japan's policy regards Mongolia is being keenly watched by all foreigners in China.

The following is an article published in Millard's Review of March 5, 1921, and written by S. K. Stierlin, entitled " Mysteries surrounding the fall of Urga ":

Urga, the capital city of Outer Mongolia, where lives the Living Buddha, was captured on 2 February by Baron Ungern's invading force composed of 3,000 Russian reactionaries and 100 Japanese artillery officers. The circumstances in which it was occupied were mysterious.

Gen. Chang Ching-hui, who was ordered by the Central Government three or four months ago to send reinforcements to strengthen the Chinese garrison in the city, did nothing to obey its wish, and his chief, Gen. Chang Tso-lin, inspecting commissioner of Manchuria, perhaps knew in December that such would be the fate of Urga, and yet took no action to guard against it.

The Urga mystery is heightened when it is learned that Baron Ungern, who effected the capture of the city, is a right-hand man and a most faithful follower of Semenoff, the redoubtable Cossack chief; that Semenoff has been on friendly terms with Chang Tso-lin, and that Chang Tso-lin has been entrusted by Peking with the responsibility of preserving peace and order in Urga. One word from Chang Tso-lin, and Semenoff would command Baron Ungern to withdraw in no time, and Baron Ungern would obey Semenoff's order implicitly.

Instead of nipping the trouble in the bud, Chang allowed it to develop, and instead of doing the simplest and easiest thing in the circumstances in order to

cope with the grave situation that has already arisen, advocated the sending of an expeditionary force; the appointment of Chang Ching-hui to be high garrison commissioner of Mongolia; the dispatch of Feng Yu-hsiang's mixed brigade by Tsao Kun, inspecting commissioner of Chihli, Honan, and Shantung, to assist in the campaign; the purchase of a large number of motor trucks for transportation purposes; and the enlisting of military aid of Heilungkiang and Sinkiang.

Preparations for the recapture of Urga are truly being made on a grand scale and in all pomp. The cabinet at Peking is discussing the question of preparations every day at its meetings, and the President is devoting a part of his attention to it. But what are the reasons for this superb stage setting? Or rather what are the explanations of the Urga mystery? Numerous telegrams exchanged between Peking and Mukden do not give any enlightenment on the mystery.

Half a dozen plausible reasons, however, have been given for the strange situation, and they are being widely discussed in diplomatic, journalistic, and other quarters at Peking with an animated spirit. Even if one of them should eventually turn out to be authentic, Chang Tso-lin proved himself anew to be a clever man with a complicated and intricate brain, and to be on the alert all the time to seize any opportunity that will give him more power even if it may cost him and his country expensively.

Before explanations of the mystery offered by those who are supposed to be in the know, can be appreciated, it seems necessary to give a little background of the situation. About two months ago Semenoff, hedged in by the Bolshevik force, practically driven into Chinese territory and on the verge of being incapacitated as a Russian political factor, had a mysterious interview with Chang at Mukden, following which a general conference, in which some Japanese participated, took place. It appears that at the conference Chang pledged support to Semenoff, an arrangement for mutual assistance was completed, and financial support was promised by the Japanese present to put into effect the arrangement.

After the Mukden conference, little of which was known to the public, there was a lull in the Urga situation—the lull of a calm sea preceding a terrible storm—under the cover of which Semenoff's men were gradually assembled from all directions again and armed with the best modern weapons of Tokyo make in the vicinity of Urga. Some of his officers came to Peking to intrigue, amply supplied with yen. Thirty of them are still hanging around in the Chinese capital and spreading rumors of the wildest nature. They are perhaps acting as a sort of secret-service men for their chief, and are vitally interested in whatever dispatches Chang has sent to Peking, presumably endeavoring to find out whether Chang has lived up to the arrangement of cooperation.

With a little background such as this, explanations of the Urga mystery may become more comprehensible and appear less absurd. One of the explanations is Chang's desire to weaken the influence of Tsao Kun, his strongest rival in the political field. Chang is applying to the Government for permission to send Feng Yu-hsiang's troops to Urga for reinforcement. Feng is more or less attached to Tsao and his transfer from Honan to Mongolia would deprive Tsao of one brigade. Both Chang and Tsao are engaged in manoeuvering for a position of advantage.

The attempt of Chang to do away with the remnants of Little Hsu's troops in Urga through the agencies of Russians has been given as another explanation of why Chang let Urga slip out of Chinese control. As early as November, 1920, Chen Yi, Chinese Amban in Urga, in a dispatch to Chang, requested that more soldiers be sent to rescue the troops then besieged by Russians on three

sides. If Chang wanted to prevent the fall of Urga, he had more than enough time to take measure against it. Why, then, was he indifferent to it?

After the overthrow of Little Hsu in the summer of 1920, many of his followers were still in control of Urga. Nominally they have sworn allegiance to Chang, but in reality they are far from being obedient to him. Chang knew this, and knowing it, might have considered it a way of eliminating them to allow Russians to advance and butcher them. Reports from Urga indicated that many of the Chinese troops doing the garrison duty in Urga were killed in the fight with the Russian reactionaries.

That Chang desires to increase his power and influence in Mongolia has been given as another reason. In Manchuria Chang is all powerful, but he has not yet crystallized his position in Mongolia. Japan is anxious to have a buffer State between herself and the Bolsheviks so that she may be free from their attacks; in the event of necessity, can do battle in an alien territory; and make the border of her own territory as the last defense against a possible Bolshevik invasion. Chang and Japan find in the buffer-State proposition a common ground for cooperation.

At first it was reported that the Japanese were making the Far Eastern republic of Siberia a buffer State and the Japanese militarists were proud of the work. But the buffer State, after all, it was later found, was not of Japanese but of Russian pink. The object for which Japan has maintained troops during the last two and a half years and is still maintaining them, stated the Kokumin, has been completely defeated. Having failed in creating a buffer State in Siberia which will obey and allow her to dictate, Japan is now trying to establish one in Chinese territory.

Chang certainly welcomes an extension of his power to Mongolia if Japan is willing to assist. What will he not give to lay a firm foundation in the historical soil for a future Chinese empire with himself at the head of it? Even if the buffer State may be used by Semenoff as basis for operation against the Reds, Japan will have the say in the administration of it, and the move may cause misunderstanding between China and Siberia; he will be a party to it if it serves his purpose.

In other words, Chang is playing his game, Semenoff has his own game to play, and Japan is playing her game. They have apparently arranged the fall of Urga to mark the beginning of their fascinating international game with Japan occupying a predominant position. In the end both Chang and Semenoff will lose out. There is little doubt about such an outcome. But what does it matter? Having been blinded by ambition, Chang is becoming a willing tool in furthering Japan's design. Semenoff has been foiled once before, and declared that Japan should help him to the end, but he becomes only more involved in her intrigue with the possession of tremendous natural resources in Siberia as her objective.

Such being the reported relationship between Chang and Semenoff, between Semenoff and Japan, and between Chang and Japan, there should naturally be an influence working against the acceptance of the offer of the Far Eastern republic made through M. Yourin, its representative at Peking, to give military assistance in the suppression of Russian reactionaries. Believing that the defeat of the Russian reactionaries in Urga will bring peace and order to Siberia, M. Yourin informed the Chinese Government a few weeks ago of the readiness of his Government to dispatch disciplined troops to Outer Mongolia to cooperate with Chinese forces and to withdraw them as soon as the disturbance was over and of its undertaking to ask nothing from China for its service. China declined the offer.

The Living Buddha, or Hutuktu, is a mysterious figure in the Urga situation. Before Baron Ungern's force seriously attacked the city, he has escaped Chinese vigilance and fled. He has now declared independence of the Peking Government for the whole of Mongolia, Inner as well as Outer. He styles himself "the emperor of Mongolia" and the "religious king of the yellow faith in Mongolia and Tibet," and invites subscriptions by his subjects of funds and foodstuffs to the Mongolian army raised to expel the Chinese troops from their territory. Whose game is he playing? He thinks he is playing his own game. He is laying plans for the establishment of an empire in Mongolia, but it is feared that he is playing the Japanese game. Tokyo's master hand has wrought the Urga mystery, and clever as Chang Tso-lin is, he knows little of the Japanese intentions in regard to the new situation, the gravity of which is scarcely surpassable.

Stierlin analysis of the situation is very interesting in that he carefully weighs the different advantages and disadvantages that an independent Mongolia means to Japan, Chang Tso-lin, Semenoff, and the Far Eastern republic.

The following is a report given out to the press by Maj. Dockray regarding the fall of Urga. Dockray is the first foreigner to return from Urga since the capitulation of that city:

The conditions at Urga prior to the attack were most ghastly. The Chinese soldiery robbed and raped unchecked. The Russians especially were persecuted though all foreigners were unsafe, trade and commerce were at a standstill. During the night prior to the attack the Hutukhtu, who was guarded by 100 Chinese. was rescued from his palace by a band of Tibetans, who killed 96 of the guard and carried off the Hutukhtu to the mountains.

The attack on Urga started on the morning of 2 February, Baron Ungern making a feint from the north and successfully enticing a portion of the garrison in that direction. He then attacked heavily from the East Pass and from the south with his artillery stationed on the Han Mountain. A strong Chinese force holding the pass was thrown into a panic at the first cavalry charge and ran off into the Chinese city into Urga under a double machine-gun enfilade. The casualties were very heavy.

Urga capitulated without resistance on the morning of 3 February. It is estimated that half the Chinese garrison perished, although outnumbering the attackers, and the remainder escaped to the north, abandoning their artillery and a very large amount of munitions. No prisoners were taken on either side.

During the bombardment a shell entered the engine room of the wireless station, which is now out of commission.

Baron Ungern is strictly prohibiting looting, and is heavily punishing the slightest disobedience. He has granted an amnesty to all Chinese in spite of their previous persecution of the Mongols, but is executing all Jews, Germans, and known Bolsheviks. Order was restored in the city as soon as possible. Foreigners are being well treated, the only exception being the confiscation of Mr. Steffan Hansen's passport. The discipline of Baron Ungern's forces is excellent, the slightest insubordination being most severely punished.

Baron Ungern desires to attack Kiakhta but it is reported to be held at present by 15,000 troops, while Baron Ungern's forces consist of about 70 Japanese, 500 to 1,000 Russians, and 4,000 Mongols and Buriats. Baron Ungern is now actively recruiting.

Upon the arrival of Maj. Dockray and his party in Peking, he was interviewed by all newspapermen; a copy of the telegram sent by the very able American journalist, Mr. Gilbert, to his paper, the North China Daily News in Shanghai, follows:

Maj. Dockray party having arrived Peking to-day, tell first authentic story fall of Urga. For two weeks prior to attack Mongols were aware Ungern's presence in immediate neighborhood Urga, while Chinese oblivious, believing Ungern far eastward. During latter weeks Chinese soldiery particularly obnoxious, looting shops, raping women, robbing Mongols, killing many Russians and Mongols of prominence. Ungern delayed attack pending rescue Hutukhtu, but principally awaiting munitions, supplies, exHailar. Attack commenced from east 6 o'clock morning February 1; intensified 2d. Morning 3d all Chinese officials left in eight motor cars for Kiakhta, deserting soldiery. Latter then attempted escape westward from Maimaicheng, but were enfiladed by Ungern machine guns concealed north and south highway east of Russian concessions. Survivors then turned north, escaping with horses, carts, camels; also many afoot. Ungern forces did not pursue, anticipating other detachments on Kiakhta road would exterminate fugitives. Many Chinese soldiers remained after general flight to loot Russian community, then discarding uniforms, rifles, hid in houses, but 60 subsequently found executed. Foreigners fired upon by Chinese soldiery whenever abroad. Ungern, with 40 Japanese bodyguards and Tartar regiment, entered Urga afternoon of 3d, ordered Chinese civilians remove bury dead soldiery. Work required three days; 2,500 corpses removed, bearing most saber wounds. Mongol régime promptly installed, Ungern describing himself as Mongol auxiliary. Foreigners well treated by Russian Mongols but unallowed return Kalgan. One Bolshevik supplied Ungern names 28 communists, who all executed, after which informer cut in pieces. Ungern equipment largely Japanese, but Italian machine guns. Buriat officers drilling new Mongol force conscripted by Hutukhtu, all between ages sixteen forty being called. Ungern plans campaign against Kiakhta, but Mongols want peace, resumption trade with China, on condition autonomy guaranteed; no Chinese garrisons reside Mongolia. Preparations made crown Hutukhtu emperor Mongolia 15th first moon. Shell wrecked engine room new wireless station, requiring substitution new parts from England before station again working properly.

CHINA—SHANTUNG.

Source: Tsinan Jih Pao, a Japanese propaganda organ published in Chinese, entitled "A general view of the far-eastern policy of the United States."

(12225–B.)

29 March, 1921.

In a recent number of the Tsinan Jih Pao one reads the following in an article entitled "A general view of the far-eastern policy of the United States:"

The Republican Party won an overwhelming victory at the last election. The powers of Government will soon be taken from the Democrats and handed over to the Republicans. Therefore, let us discuss the question of how to meet the far-eastern policy of the Republican Party, which is about to take charge of the American Government.

According to certain sources of information Harding's policy will not differ from Wilson's. The American far-eastern policy, which has been so difficult for us to grasp, will, probably, presently reveal itself. Whenever we think of the traditional Republican Party's policy, we can not but raise the following questions: (1) How and (2) to what extent the Republican administration will support the aggressions of American capitalists in the Far East.

As a result of the European war the United States has to-day unlimited capital. Unwilling to invest capital in devastated Europe, the United States wants to secure markets in South and Central America on the one hand, and on the other in the Far East (including India, China, etc.). This is her determined policy. So we can be sure that during the next few decades American capitalists will overrun China. This became evident during Wilson's administration through such things as the withdrawal from the Quadruple Loan Syndicate on the ground that remaining in it would be contrary to administration's policy. This attitude is again abundantly shown in the new consortium. It is, undoubtedly, the policy of the Republicans to back the capitalists in their foreign investments. As to Wilson's sudden change of policy, that was due to pressure exerted by the capitalists, so that he was compelled to change the traditional Democratic policy.

The future policy of the Republicans will not differ from that of Wilson's, because the latter had already surrendered to the Republican Party.

Now let us discuss two different policies. The Republican policy of backing the capitalists is similar to the policy of the Japanese Government party. It often causes political disturbances and a lowering of political morality. In the latest presidential election the capitalists of the country mostly supported the Republicans. The Republican national committee spent huge sums of money for influencing voters. This gives us a glimpse into the state of things.

The motive for German military expansion was world domination as well as an ambition to conquer the world markets. We fear that, as in the case of the Germans, economic aggression lies back of the American naval expansion.

Unfortunately, the disturbed political and social conditions of China make it impossible for the Americans to overrun China. Moreover, China is not a hotbed of international intrigue. Nevertheless, the newspapers say that the American Government is protesting in the wireless dispute. This suits the Republican policy exactly. The financial aggressions of the Americans will daily increase and will cause many international misunderstandings. It will be too much to say that Harding's policy will be exactly like the traditional Republican policy. We hope that the Harding administration, as well as the Japanese and the English Governments, will change its policy of supporting the financiers and will cooperate in order to remove international misunderstandings.

LAUNCHING OF ITALIAN GUNBOAT AT SHANGHAI, CHINA.

Source: Reliable.

(14375.)

4 March, 1921.

The launching at Shanghai of the Italian river gunboat *Ermanno Carlotto*, which was built for the Italian Royal Navy by the Shanghai Dock & Engineering Co., was attended on 26 February, 1921, by Mr. de Rossi, Italian consul general at Shanghai, who represented His Excellency Marquis Durazzo, Italian naval attaché, officers, and men of the Italian gunboats *Caboto* and *Ermanno Carlotto*, and prac-

tically the whole of the Italian community at Shanghai. The launching was very successful.

The new vessel is 160 feet long, 24 feet wide, and has a draft of only 3 feet. Her displacement is 220 tons. She has two triple-expansion engines with a total of 1,100 horsepower, and two Yarrow water-tube boilers. Her maximum will be 14 knots, and will enable her to negotiate the Yangtsze Gorges, for which she was expressly built. Oil auxiliary motors are provided for electric lights and for all other auxiliary fittings. She carries two 12-pounders and four machine guns and her boiler and engine decks are bullet-proof. Her trials will begin at the end of April, and she will leave Shanghai for her station in the Upper Yangtsze in July, under the command of Lieut. Commander Levi Schiff, I. R. N., who with the whole of his staff and crew arrived from Italy a month ago.

JAPANESE PREPAREDNESS POLICY.

1 April, 1921.

Naval Program.

The naval building program of Japan is the most ambitious peace-time effort yet undertaken by any modern power. It represents 32 per cent of the total revenue of the country, and the severe financial strain caused by this plan is the only reason that this extraordinary expansion is not immediately increased one-half. The total expenditure as announced by the minister of finance, December, 1920, for the year 1920–21 is 1,562,000,000 yen. Of this 498,000,000 yen is for the navy, an increase of 125,000,000 yen over the previous year. Two hundred and seventy-three million yen of this is for new construction.

The budget for the army is 263,000,000 yen, 15.5 per cent of the total revenue. The total for the army and navy is 761,000,000 yen or 48.7 per cent of the total budget. Germany in 1914 at the peak of her preparedness program allotted only 31 per cent for both the army and navy. Great Britain to-day allots only about 6 per cent and the United States about 7 per cent. Seventeen per cent of the Japanese naval budget is for new construction, and that for the United States in the new estimate is about 1½ per cent.

The naval policy of Japan is called the 8 and 8 program, and it is necessary to have a correct understanding of the real meaning of this so-called 8 and 8 program. This naval policy as approved by the Diet should more correctly be known as the 8-8-8 program, meaning eight battleships and 8 battle cruisers, all of which are eight years old and under. Thus it is clearly seen that this is a continuing program. The only limitation under the existing program is that eight new battleships and eight new battle cruisers can not be exceeded

prior to 1927; but, in order to comply with the law, the *Nagato*, the latest dreadnought in commission, must be replaced by a new battleship in 1928, and the *Mutsu* in 1929, and so on.

The program as it now stands places no limitation on the number of light cruisers, destroyers, submarines, mine layers, and other types of vessels. It simply specifies a proper number to augment the fleet and provide national security.

With the above budget the navy is to build in eight years (1920–21 to 1927–28) the following ships:

	Tons.
7 battleships	389,000
8 battle cruisers	320,000
12 light cruisers	66,000
37 destroyers	37,015
25 submarines	-------
1 aircraft carrier	-------
18 special-service vessels	-------
5 gunboats	-------

(It has been unofficially reported that by 1927 Japan plans to have 120 submarines.) Of the above first-line ships, three battleships and two battle cruisers have been started.

Expansion of yards to take care of proposed building program.—At present there are four yards in Japan which can build battleships: Two Government yards—Yokosuka naval station, Kure naval station; two private yards—Mitsubishi, Kawasaki.

The yards at Sasebo and Mizuru are equipped for building smaller vessels.

All of the above yards have within the last year been undergoing expansion on a large scale. The stocks on which the superdreadnought *Nagato* were built at Kure will be extended by about 200 feet to prepare for the construction of the 40,000-ton ships. This yard has been expanded until it is a first-class yard in every detail, capable of turning out a completed first-class ship. Ways are being prepared so that ships of 50,000 or 60,000 tons can be built.

The Mizuru naval station is to be considerably expanded during the next two years (1921, 1922). This station now builds destroyers, but is to undertake the building of submarines.

The Japanese Navy is constructing a large extension at Hiro (3 miles south of Kure naval station) to build big guns. There are already at Kure, lately received from England, four lathes big enough to turn 18-inch guns and one more of the same size is said to have been lately ordered from America; also a 200 and 150 ton crane have been purchased for this station. The expenditures for the improvements to the Kure naval station are to reach approximately 120,000,000 yen.

At Sasebo is to be a big naval airplane plant; also at Nagoya a factory for airplane motors for the navy.

The new naval gun factory at Sasebo is to be completed in two years, and when completed will employ about 12,000 workmen. The factory will manufacture guns not larger than 12 inch.

A visit to the arsenals in Japan shows that the present activities of the Japanese in regard to the construction of war materials is generally underestimated. All factories except Kure are working full capacity—12 hours a day; Kure is running 15 hours a day.

The naval authorities have purchased a tract of land, about 80 acres, in Sunoki, Nagasaki Prefecture, on which they intend establishing a naval arsenal. This new naval plant is to be used for the manufacture of shells and mines.

Considerable expansion of the Yokosuka naval station is planned. All this expansion of navy yards shows far-sighted and well-laid plan for rearrangement of facilities to be completed by a definite and fixed time; that is, 1924, for one purpose only—rapid naval expansion. This great naval development apparently can only be used for the purpose of providing Japan with a weapon to be used against any nation that attempts to interfere with her plans of Asian hegemony.

From a reliable source in London, January 12, 1921, it was reported that the Japanese have contracted for armor as follows:

Vickers (Ltd.), complete armor for one battle cruiser.

John Brown (either, or) The Firth Co., of Sheffield, complete armor for one battle cruiser.

The Naval and Military Record of February 9, 1921, states that Messrs. Vickers are manufacturing 7,600 tons of special curved armor plate for the barbettes and conning towers of the battleships *Kaga* and *Tosa* and are also building several sets of 1,200 brake-horsepower engines for submarines, the boats themselves being on the stocks in Japan. Messrs. Hadfields are turning out several thousand armor-piercing projectiles for the 14 and 16 inch guns of the Japanese battleship fleet.

A reliable source in Tokyo under date of September, 1920, confirming this states that Japan has contracted with the Vickers Co. for naval equipment to the amount of 70,000,000 yen.

Japan has all the necessary machinery for casting, forging, machining guns up to 16-inch caliber. Machines, English make, set up, but not used as yet. Have not succeeded in casting successful gun-ingot steel as yet. Vickers has recently made a loan of $50,000,000 gold to Japan—loan to be used in purchase of munitions from that company.

Vickers, London, and Westinghouse, American companies, are said to have perfected arrangements for partnership combination cover-

ing the Far East. Japan has purchased a large number of British mines, supposed to be prewar type and pattern.

Report from London, dated December 28, 1920, states that Pouleno Freres, of France, have received from the Japanese Government orders for large quantities of powder. Engineers from this firm are also going to Japan to establish a powder factory.

The Petrie and McNaught Co. (Ltd.), of England, have closed a contract with the Japanese Government to furnish them with wool-washing and drying machinery to be used in the manufacture of powder.

The Japanese war department has placed orders in Germany through Illies & Co., a German firm of Yokohama, for special machines for the manufacture of powder to the extent of 2,000,000 yen, the machines to be delivered by April 1, 1921.

January 8, 1921, it was reported that Vickers Co. had received a contract for the supply of a big quantity of shells and also projectile machinery from the Japanese Government.

The Gould Storage Battery Co. received an order for 20,000 new plates of the size and type used in submarines to be delivered April 1, 1920.

Under date of 31 March, 1921, we were informed that the Newton Machine Tool Works on Twenty-third and Vine Streets, Philadelphia, have just received an order for the following machine tools for the Japanese navy yard at Yokosuka, Japan. This order was cabled to Mitsui & Co. in New York about 10 days ago, and it was stipulated that they did not wish these machine tools unless delivery could be made before November, 1921. This is said to be the largest order which the Japanese Navy has placed for articles of this kind since 1917. It is significant that no general bids are asked for on this material, and that apparently Mitsui & Co. did not know about the need of these machine tools until very recently.

Are informed that these machine tools are for the engine-building department of the shipyards at Yokosuka, for either turbine work or for the reciprocating engines. They are said to be for very large power equipment, and are also informed that only two or three very large installations in this country, such as the General Electric Co. at Schenectady, N. Y., or the Westinghouse Electric Co., near Philadelphia, would order such machine tools.

They are as follows:

(1) Corliss cylinder boring machine for boring big engine cylinders.
(2) Two portable slotting machines.
(3) One wall planing machine (only two or three in this country as large as this one).
(4) Two portable drilling machines.
(5) Two stationary drilling and boring machines.
(6) One radio drilling machine.

We are reliably informed that this order is valued from $150,000 to $200,000.

The following secret message was received from The Hague under date of March 30:

Offer received by Fokker from German agents of some other country for all war type planes he can produce by June, planes are for oversea shipment, and must be at their destination by August and not at sea. Lezter, Fokker's business manager, has just returned from Germany, and says large firm in Berlin which has international connections informed him that by August they expect war between Japan and the United States. Offer probably from Japan is belief of Fokker, although he states he was not so informed. His production by June will be 30 type-C one, 42 type (D seven), and 6 type D–8. He is now awaiting reply to offer of about 100 planes made to United States Army through military attaché before taking action on German offer. I have stated to Fokker that in my opinion sales to unknown Governments as contemplated will prejudice all future standing with this, the United States Government.

Optical instruments.—January 24, 1921, it was reported from Berlin that it had been definitely determined that optical glasses sufficient for the needs of the Japanese Navy for four years had been purchased by Japanese agents in Germany. This glass was of the kind used for range finders, periscopes, and for mirrors. Some of the glass was delivered six months ago.

The owner of the optical concern, Nippon Kogaku Kabushiki Kaisha, in Tokyo, a certain Fujii, has arranged for nine optical experts from Germany, largely exemployees of Goerz, to go to Japan to assist in building up the optical industry there for war material. These experts are experienced in the design of periscopes and range finders. The Germans are taking their families with them to Japan intending to stay for some time.

The above firm is closely connected with the Mitsui Bishi firm. Two other engineers from the firm of Carl Zeiss are also on their way to Japan.

From these reports—February, 1921—it is certain that the Japanese will now be in a position to manufacture all their optical instruments in their own country and that their source of supplies will not in any way be cut off in case of war.

Submarine and Diesel engines.—It has been definitely determined—January 24, 1921—that two of the engineers of the Germania Warft in Kiel who have been employed for some years in design and construction of Diesel engines, have accepted positions with the Japanese Government in connection with the construction of Diesels by Mitsui & Co.

It is certain that the Japanese Navy is buying large numbers of submarine engines in Switzerland and in Germany and is also building some in Japan, having purchased the licenses to construct the latest types in Switzerland, Italy, and England. It has been defi-

nitely established that the Japanese have bought and exported sufficient motors of the Diesel submarine type to meet their immediate requirements. In August, 1920, the Japanese shipped from Hamburg three Diesel engines of the M. A. N. submarine type, 3,000 horsepower. In January, February, and March, 1920, Japan shipped about 15 engines rated at 450 horsepower. It was reported from Germany (1920) that over 800 submarine building specialists, etc., have gone to Japan.

An Italian firm has been requested by Japan to make 500-horsepower motors for submarines. Designs are now being prepared.

Export of Diesel motors from Germany to Japan has been continuing from the time of the armistice up to the present date. The Japanese are reported to have resorted to bribery of German officials in order to make these shipments from Hamburg; they are reported to have resorted to bribery to get the Diesel motors which had been shipped to Switzerland, and to Holland.

The Japanese have made offers to Mr. J. Boykow, former captain in the Austrian naval aeronautic service, inventor of bomb sight manufactured by Goerz, an inventor of ability and high standing.

In a report dated January 14, 1921, it is stated that a contract was placed with a Swiss firm engaged in the manufacture of submarine engines for two 3,000 horsepower engines by the Imperial Japanese Government. The first two engines of this type underwent the official test and have proven satisfactory. The Japanese Navy now intends placing orders for two bigger submarine engines of 5,000 brake-horsepower. These two engines are suitable for submarine cruisers of by far the largest type known. Twelve submarines, at a total cost of £7,000,000, have been ordered from England.

It is understood that Japan has negotiated with Sulzer Bros., for machinery for a triple-screw submarine cruiser, having two 5,000 brake-horsepower, one 3,000 brake-horsepower, and two auxiliary engines.

The Aluminum Co. of America in a report dated March 11, 1921, has been asked by agents representing the Japanese war department to quote prices for large deliveries of machines capable of manufacturing upward of 14 tons of fulminating mercury detonators per month for a period of 12 months.

The Warner Chemical Co., whose office is located at 52 Vanderbilt Avenue, New York City, has been asked by similar agents to quote prices for chlorine gas producers and rates for producing large quantities of caustic potash.

Japanese commissions have been attempting to purchase plans and specifications for the latest type of submarine Diesel engines. The Japenese intend, if possible, to build up their own Diesel-engine

industry and Japanese engineers in Germany have stated that they have succeeded in building in Japan a 3,000-horsepower type.

The firm of Krupps have made proposals for the construction of new large submarine engines to the Japanese Navy.

The firm of Escher Weiss & Co., of Zurich, Switzerland, are regularly supplying the Japanese with a considerable number of water turbines for their hydroelectric plants. The Japanese have also placed an order with this firm for two 12,500-horsepower steam turbines for a destroyer being built at the Ishikawajima shipbuilding plant, Tokyo. These turbines are en route to Japan in a Japanese vessel. They are to be used as models with the idea of manufacturing in Japan.

Aviation.—8 February, 1921, it has been definitely determined on reliable authority that airplane motors manufactured by the firm of Siemens Schuckert are being transported to Holland at the rate of 1,000 per month. This export has been going on for a period of at least eight months. The motors are taken out in parts and shipped as stock and unscrapped steel. After arrival in Holland they are reassembled and shipped complete to their destination. These motors were purchased by Japanese agents.

In a report dated 17 February, 1921, from Berlin, he states that a Japanese commission of seven members visited the Zeppelin works at Friedrichshafen. It was admitted by the director for that concern that the Japanese Government completed a contract some time ago with the Zeppelin works. One of the provisions of this contract required the services in Japan of two or more of the older and more experienced Zeppelin Co.'s pilots, ostensibly to assist in the selection of sites for airship sheds. The money to cover their expenses has already been deposited, and the men in question are expected to leave very soon for Japan.

The Pfalz motor works located at Ludwigschaven opposite Mannheim, Germany, have been reported from an absolutely reliable source to be manufacturing airplane motors in large quantities. It is reported from another source that 30,000 of these motors have been shipped to Holland for transportation to Japan by the Dutch East Indies.

The Japanese have agents all over Germany and particularly in Berlin who are purchasing and exporting large amounts of war material to their own country, in complete disregard of the treaty of Versailles. The plant of the M. A. N. Co. in Augsburg is visited about once a month by a large delegation of Japanese agents; they have succeeded in purchasing some few plans for Diesel motors, but the latest plans for the submarine type engines have apparently not been sold to the Japanese.

Japan is making every effort possible to bring her aviation up to a par with that of the other great powers, and through the purchase of many airplanes abroad and under the instruction of French, English, and Italian fliers and the expenditure of large sums of money is making steady progress to this end.

A great number of fliers and mechanics are sent abroad yearly for instruction, usually to France or Italy. Many German mechanics are now being employed in the manufacture of motors. The French air mission which came to Japan in January, 1919, and consisted of 22 officers and 30 noncommissioned officers, did much toward putting Japanese aviation on a firm foundation and is largely responsible for the great improvements witnessed in army aviation during the past two years. They established many schools and as a result of their teaching, the number of pilots and observers has increased steadily. For the army there are at present (end of 1920) from 250 to 300 qualified military pilots; about 30 per annum graduate from the flying schools at Tokorozawa.

The naval aviators are to be instructed by an English naval air mission consisting of 30 officers, which is expected to arrive in Japan in the spring of 1921.

Commercial flying is being encouraged. The supplementary budget for 1920 provides for the training of 10 civilians yearly at Army flying schools.

Civilian manufacture of airplane motors is being encouraged. The near future will witness civilian manufacture of airplanes and airplane motors.

Air domes are being built and landing fields constructed. Long-distance flights are being attempted both by the army and navy.

Wireless telegraphy, photography and duties for spotting for artillery and infantry contact are being taught the pilots. Most of the airplanes and motors have been purchased abroad; those manufactured in Japan are copies of simpler European or American models.

Plans are being zealously rushed looking forward to the development of carrying of planes on battleships. Most of the battleships and battle cruisers of the 8 and 8 fleet will carry planes. An airplane carrier modeled after the latest ones of the British Navy is now under construction.

Iron and steel industry.—Recent advices from Tokyo January 18, 1921, places the output of the Yawata steel plant at approximately 300,000 tons of iron and steel per year rather than 100,000 tons as reported in the papers. About October 1, 1920, the foundry held unsold about 70,000 tons of goods in addition to 330,000 tons of stock held in storehouses and by private concerns. Two open-hearth furnaces have recently been purchased by the foundry at approximately

$300,000 and it is expected that additional equipment will shortly be acquired.

It is reported on expert authority that the Japan steel work (Muroran Hokkaido) has naval orders that will require 12 years for completion and orders from the Japanese Army that will require 7 years for completion. For this reason large orders have been placed in England.

The go-downs are everywhere crowded with great quantities of metals and yet the Japanese are everywhere buying far more than the consumption warrants. A similar situation exists regarding copper, tin, and chemicals. Competent observers are convinced that the only solution is that Japan is preparing for war and is stocking up to withstand a blockade. It is evident that Japan already has on hand more than a three years' supply of metals.

It has been said that Japan's purchase of copper and zinc taken in conjunction with her heavy buying of iron and steel meant the develpoment of a Germany of the east.

The United States Shipping Board digest of 4 December, 1920, states that as a result of scientific experiments carried out for the Japanese war department a method has been discovered whereby iron may be smelted from the volcanic ores of the islands. The method is being guarded as a military secret, but already it is being confidentially stated that the time is not far distant when Japan will cease to suffer from the want of steel. This discovery, if successful, will prove of great importance to the shipbuilding industry of Japan.

A report from the Military Intelligence Division January 22, 1920, states that the iron industry of Japan made development during the war. In 1913, just before the war, the volume of pig iron produced in Japan totaled 240,000 tons and steel 250,000 tons, but pig iron to be turned out in Japan during 1919 and 1920 is expected to amount to 1,200,000 tons, i. e., 900,000 tons from Japan proper, 80,000 tons from Korea, and 240,000 tons from Manchuria. It is also expected that pig iron and steel to be demanded during 1920 will reach 430,000 tons and 1,300,000 tons, respectively, but iron foundries in Japan are now able to meet all the demands except special kinds of steel and iron. The capacity of the iron foundries in Japan is now 1,220,000 tons, and in 1923 it is estimated that there will be available in Japan, after all planned extensions are completed, 1,467,000 tons.

The iron industry in Japan, stimulated by efforts made in the war, has now nearly reached the stage of being self-supporting.

The Japanese war department has made plans for mobilizing the iron and steel industries. Six large iron and steel foundries are to be amalgamated—this to make the country self-supporting in the iron and steel industry.

During 1920 the Japanese Government purchased about 20,000 tons of pig iron in Sweden, this pig iron to be used for their armor plate and other projectiles to give body to the steel purchased elsewhere and manufactured in Japan.

For 1921 it is estimated that the amount probably will reach 30,000 tons, and that the Japanese are very much interested in the Swedish steel market.

Tin plate.—Orders approximately 36,000 cases of tin plate have been placed in the United States within the last year.

Copper.—Japan is one of the principal copper-producing countries in the world, ranking second to the United States. In view of this the recent heavy purchase of copper by Japanese interests for shipment to the Orient remains more or less of a mystery to the trade in the United States. It is estimated that the Japanese have purchased about 16,000 tons of red metal in the last year. Japan produces, refines, and has exported copper herself. Sometime ago it was announced that Japanese plants had shut down, but this news was not received until after the purchases of copper in the United States. It was at first believed that the purchases were being made against this shutdown, but the sales have extended over a considerable period, and there is apparently no indication of a change of policy. The purchase of copper has increased from 377 tons in 1913 to 16,000 tons at present.

Phenol.—The Japanese recently endeavored to purchase 23,000,000 pounds of phenol from the War Department. The dye and chemical industry is receiving marked attention in Japan with a view to furthering the manufacture of munitions. There are a number of chemical experts in this country at preesnt. The Japanese Government is buying large quantities of picric acid and similar material for making explosives.

Information from London is to the effect that Japanese agents purchased 200 tons of phenol during the month of November, 1919, and that they are buying many times their yearly consumption of phenol in various parts of Europe.

The Japanese Government intends to establish at Osaka a factory to obtain nitrogen from the air, to be used both in the manufacture of powder and fertilizer for agricultural purposes. The machinery for this has been purchased from Germany. The Haber Co. of Leipsic has supplied the formula and the specialists.

It is reported that the Japanese Government has purchased for 200,000,000 yen the nitrogen fixation plant and all the Haber patents from the German Government.

Oil.—The Japanese Government is planning to inaugurate a petroleum monopoly so that the Japanese navy department can obtain control of the national supply.

The war department is engaged in the construction of a laboratory costing 400,000 yen at Toyagahama to be devoted to experimentation in gunpowder, poison gases, fuel oils, and war materials.

Japan has for the last year been a heavy purchaser of fuel oil in this country and has been building large fuel-oil tanks for its storage.

Japan has made overtures, but without results so far, for petroleum fields in Java.

Propaganda.—Japan is conducting a widespread and vicious anti-American propaganda in China which is being paralleled by anti-American propaganda in Japan. Japan's mission appears to be to interpose herself between China and the world in both political and economic fields. In brief, it seems that Japan wishes to control and possess China to the exclusion of other nations. One means being employed to accomplish her mission is to discredit the American Government and the Americans in the eyes of the Chinese. Her methods of propaganda in China are in brief as follows:

(*a*) Establishing, buying outright, or securing controlling interests of Chinese newspapers and certain newspapers published in the English language in leading cities in China.

(*b*) Employing American and English newspaper writers and publishers.

(*c*) Employing Japanese writers in Japan of unusual ability who contribute from time to time articles for publication in the Chinese press.

Numerous examples of this propaganda are on file.

Japanese propaganda in the United States is extensive and well organized. There are several large and influential societies which, financed by Japanese, do much to favorably influence American public opinion for the Japanese. Many prominent writers contribute to well-known periodicals, presenting the Japanese point of view.

On 31 December, 1919, were reliably informed that the Japanese navy department has contracted for, in the United States, probably through the Mitsui Bussan Kaisha, for the delivery of the following oil-shortage tank materials: Fifty to sixty steel tanks, 35 feet deep by 155 feet in diameter; capacity 8,000 tons, or about 55,000 barrels each.

First tank to be delivered in three months and about two per week thereafter.

Informed on April 22, 1921, that the Japanese Government has purchased 63 115-foot storage tanks from the Treadwell Construction Co., Pittsburgh. These tanks are now in process of shipment to Japan for erection at Kure, Sasebo, and Tokyyama naval bases and are for fuel and crude oil storage purposes. Each tank has a capacity of 55,000 barrels, which means that the Japanese Navy are increasing their present storage capacity by over 3,000,000 barrels,

equivalent to over 500,000 tons. Also understand that they have recently erected a number of reinforced concrete tanks for fuel oil storage purposes.

On April 23, 1921, a confidential report was received showing that the Japanese Government has just concluded contracts for 200,000 tons of fuel oil for naval purposes. This quantity is made up as follows:

One hundred thousand tons Borneo fuel oil purchased from the Asiatic Petroleum Co. (Ltd.); price unobtainable, delivered f. o. b. Tarakan and Balik Papan.

Fifty thousand tons Mexican fuel oil, 24° Baumé, purchased from the Asiatic Petroleum Co. (Ltd.); price, 57.23 yen per ton c. i. f. Japan.

Twenty-five thousand tons Mexican fuel oil, sold by Asano Bussan, 59 yen per ton c. i. f. Japan.

Twenty-five thousand tons Mexican crude oil, sold by Suzuki & Co. and purchased from the Anglo-Persian Oil Co. (Ltd.), on a c. i. f. basis Japan but price unobtainable.

The Asiatic Petroleum Co. (Ltd.) is the marketing organization of the Royal Dutch-Shell group.

Foreign activities.—There have been numerous reports that Japan is fortifying certain islands in the Pacific which came into her possession as a result of the late war. These reports have not been verified, but it is certain from the activity which has been going on there that they contemplate making these islands bases for their fleet. Some wireless stations have been erected.

It has been reported on excellent authority that Japan purchased in 1912 (or latter part of 1918) the harbor and surrounding territory on the north coast of the Island of Batam, one of the Dutch East Indies. The island is favorably located for use as a submarine base for activities against the Philippines.

The Japanese have been active in Mexico and other South America countries, particularly Colombia, Chile, and Argentina, with the idea of cementing as much as possible her relations with these countries and to use them to advantage in case of trouble with the United States.

It is reported that there has been unlimited buying of land by Japanese in Lower California. *Bonuses are being offered to encourage immigration to the above countries and in addition to Brazil.*

A report from Vice Admiral A. P. Niblack, dated December 10, 1920, states:

It is incredible the number of Japanese traveling through Europe and resident in different countries in Europe. There are four classes of Japanese who are busy here collecting information:

Class 1: Students who collect information incidentally.

Class 2: Merchants who are subsidized to collect information and who make contracts with manufacturing firms and fill it up with inspectors to take what they can get.

Class 3: Officials and subsidized business men who travel with diplomatic passports which they have no business to have and who are the most dangerous of all.

Class 4: Secret agents composed principally of renegades, who are dangerous but are more easily spotted.

The number of class 2 and class 3 is simply amazing. At works like Barr & Stroud and Kelvin's at Glasgow, one out of every three visitors is a Japanese. They are literally swarming all over Europe; they are aggressive, cocky, and sure of themselves. The situation is very much like that before the Russian-Japanese War. The Russians would not believe that they were being done while they were asleep at the switch. The British Government itself is extremely nervous on account of this swarm of wild locusts; they crowd the restaurants in all the capitals of Europe and are in evidence everywhere. Of course the Japanese are out to capture business, and three-quarters of this whole thing is commercial enterprise, but the one-fourth is extremely dangerous to us. Three or four out of every five of these Japanese in Europe pass across the States through New York City.

Vice Admiral Niblack says further (January 12, 1921):

I regard the present situation between the United States and Japan as critical and dangerous. It is well within the range of possibilities that the military party in Japan may suddenly decide, within a year, *to declare war*, seize Guam and the Philippines, and fortify herself in the *Marshall and Caroline Islands* in such a way as to make any action on the part of the United States extremely difficult, no matter what the state of preparation of war in the United States may be. I have been cognizant, since coming to London, of the activities of the Japanese in every capital in Europe, especially those traveling with diplomatic passports which they have no right really to have.

The dominant note of Japan's military policy is preparedness. The authorities are bending every effort to bring the army and navy to the highest possible strength. Propaganda has been and is being used with considerable success to this end. The daily papers and periodicals are filled with discussions on this subject. Articles by high officers of the army and navy and the anti-American bogie are used with considerable effect. The highest officers have been urging the increase of the army and navy.

Vice Admiral Sato in the course of an article sums up the steps which Japan should take in these words: "The most urgent measures which must be taken after the war resolve themselves into three classes: First, those necessary to establish the naval power of this country." Of particular significance is this statement: "It may be that suspicion against us may be aroused in the mind of some other power by the carrying out of this program, but Japan must pay no heed to these."

Summed up, the indications showing the trend of affairs are as follows:

The European war has resulted in the enlargement of most of the old arsenals in Japan, as well as the establishment of many new ones, in order to supply the Allies with war material, especially Russia. Thus, Japan is in a far better position in respect to the manufacture and supply of military equipment and munitions of all kinds than she was three years ago. The money received from Russia for munitions has not been turned into the general treasury, but is being used for expansion along naval and military lines, without reference to the Imperial Diet, and hence it is difficult to say for what definite purposes it is being expended.

There seems to be no question but that Japan is preparing for any eventuality that may occur and that America is the country she has in mind. As evidence, there can be cited, first, the continuous newspaper propaganda, in which America is blamed for any and all her troubles; second, the immense appropriations for the army and navy, which have met with little if any opposition; third, the great increase in imports of steel, copper, and tin plate, frequently at fancy prices; fourth, efforts to secure iron and coal in China and Siberia, so as to be independent of the rest of the world; and fifth, the guarded but yet apparent hostility of the people toward America.

The army is not yet ready for a war. New tactics, based on the experiences of the European war, have not yet been introduced into the service; this, however, could be accomplished within a year. Aviation and submarines are still quite deficient, and it would not seem probable that anything would be done until that weakness is rectified in some way. Other material is also deficient, but it is believed that the coming year will witness many changes in that respect. The same activity is apparent in the navy.

This question is serious enough to warrant earnest consideration by the authorities concerned.

Japanese expansion policy.—The population of Japan is increasing at the rate of about 700,000 a year, and the question of taking care of this overflow of population is a serious one. Her people have heretofore been mainly agricultural, but the increase in population has driven her to turn her attention to the development of manufacturing industries for the support of her people. Only one-third of the area of Japan is tillable.

In connection with the surplus population Premier Hara in the Japanese Diet on March 30 admitted that the problem was grave but that he did not think it so pressing as some scholars and foreigners seemed to consider it. He said there was still room both in Japan and the districts which might be called Japan's sphere of influence

for absorbing the increasing population. The progress of industry in Japan would also need more men; moreover, the Government has been encouraging the cultivation of land. These remedies, the premier thought, would contribute to the solution of the population question.

The reaction following the end of the artificial stimulation due to the late war is now being felt. Japan has a large excess of skilled and unskilled labor, which is the cheapest in the world. Much of this unskilled labor came into the cities during the war and found employment in shipyards and other industries which sprung up like mushrooms during the war boom. With the collapse in the business and financial world, many of these new industries have now gone out of existence and many of the men and women are returning to the farms from whence they came. Factories are now being closed or working hours reduced. Workmen have been discharged by the thousands. The supply of labor far exceeds the demand. It is estimated that about 25 per cent of the factories and various other industrial plants of Japan have closed altogether. The number of laborers out of employment probably is not less than 200,000 and nearly 350,000 more will be out of employment if the silk filatures and mills are kept closed. Of all those who lose their jobs some, probably about 20 per cent, return to the farms. Many women are finding employment as servants in the cities.

The great naval expansion of Japan is an alleviating factor in the present labor unrest. This involves the construction of many warships and the many who lost their jobs when the smaller shipyards closed down have found work in the larger shipyards which have increased their forces in order to execute contracts for the Government. Large numbers of skilled workmen in the steel and iron industries especially are kept at work. In August, 1920, the Kure Naval Arsenal was recruiting over 5,000 workmen to be employed in the construction of warships.

Japan does not possess the natural resources either to fill the requirements of her industrialism or the requirements of a protracted war with a first-class power. The chief staples which she lacks are:

(1) Iron and steel (conditions improving yearly).
(2) Cotton.
(3) Oil.
(4) Rice.
(5) Coal (especially first-class steaming and coking coal).
(6) Zinc.

Her iron production is small as compared with her requirements, but is increasing.

Cotton and rubber must be imported from America and Asia.

Only one-third of the zinc needed can be produced at home.

There is a progressive deficiency of rice production on the mainland of Japan.

Her coal deposits, while sufficient in amount to fill her requirements for a hundred years or more, are not of good quality for steaming nor for coking requirements of the iron and steel industry.

To meet these demands she has set about securing:

(1) Mineral resources on the continent of Asia, principally in China and Manchuria.

(2) Land for colonization by her excess population.

(3) New markets for her rapidly increasing industries.

Japan believes that the solution of her problem lies in the control of Asia, and she has deliberately set about to obtain this control. By taking advantage of the opportunity offered by the preoccupation of Europe and America during the late war and of her favorable geographical position, she has been able to obtain a long start toward this end.

Her principal activities along this line have been:

(1) Annexation of Korea. (Completed.)

(2) Control and occupation of Manchuria and maritime region, including Kamchatka; northern part of Saghalien Island, Possiet Bay (at boundary line of Korea and Manchuria).

(3) Occupation of Shangtung and creating a sphere of influence in Fukien Province.

(4) Control of railways and other communications in the above.

(5) Extension of her spheres of influence in Mongolia and Siberia.

(6) Promotion of dissension among the various interests in China and support of the military party by loan and propaganda. A majority of the members of the Chinese Government are in her pay.

(7) Control of natural resources in China. She controls from one-third to one-half of the operating collieries, controls and operates large steel mills in the Yangste Valley and coal and iron mines in Shantung. She also controls extensive timber interests.

(8) She has had commercial schools established in China for 20 years for the training of young Japanese in commercial pursuits in China.

(9) Determination to retain mandate over Marshall and Carolina Islands and island of Yap.

Japan believes that the foreign policy of the United States is the greatest obstacle to her Chinese aims.

In conclusion the following observations on Japanese character by the commander in chief, Asiatic Fleet, with special reference to Japan's ambition and her relation in this connection with the United States, are of interest:

U. S. S. "Huron Flagship,"
Chefoo, China, 8 September, 1920.

1. The relations between the United States and Japan can not be said to be satisfactory. Incidents are daily created which cause irritation and animosities; and, unless the situation is cleared up, the two countries will probably drift into war. That Japan is preparing for this eventually is indicated by her increased naval appropriation and the enormous amounts of foodstuffs and war material she is importing.

2. Japan tries to explain these activities by saying that she is only completing her defenses. *Who is going to attack her?* The United States which is her only probable enemy will certainly not initiate hostilities. I do not believe that Japan wants to fight us, who would prefer to remain friendly; but I do believe that her one great ambition is to be in the east what the United States is in the west and England is in Europe. She wants to lead Asia; and, under the guidance of the militarists, she means to attain that object at any cost.

3. As England was the obstacle to Germany in realizing her ambition to dominate the word, so the United States stands across the path of Japan; for it is probable that we would not regard with unconcern her further advances upon the mainland of Asia, or her occupation of the islands in the Pacific. This hope of the mastery of the east is, I believe, the inspiration of all Japan's endeavors, and is the real cause of her anti-American feeling. Racial and commercial differences are burning questions, but they are subsidiary, although ancillary, to the great proposition of Far Eastern control—economic, political, and military. Like the Catholic Church, Japan builds for the centuries. A nation which claims 3,000 years of imperial power in unbroken succession can afford to wait patiently 50 or 100 years to realize her ambitions.

4. The influence of Japan is now paramount in the eastern Pacific and is growing steadily. She is making progress toward her goal. From Tsingtao to the Amur River and beyond the Japanese flag is in evidence, and there is scarcely a town on the coast between where the Japanese merchant has not set up his shop. In many places the soldier has followed the merchant.

5. The first move of domination and expansion was her overflow into Formosa, Korea, United States, and Manchuria, under the pretext of finding room and food for her overcrowded and increasing population. It is true that Japan's population is increasing rapidly, but it may be doubted if it is necessary for her on this account to attempt colonization in other parts of the world. In a recent book discussing this subject the author challenges this reason for emigration, and his conclusions agree with those expressed by Prof. David Starr Jordan 20 years ago. He asserts that Japan has vast untouched wealth in uncultivated, uninhabited, and arable lands.

He says that Japan has neglected her land and that if she would attempt modern methods of using what are now unproductive lands, in the utilization

of hillsides and irrigation and cultivating five-sixths of the land surface of the country which is now idle except for lumber, she would have room for three or four times her present population. This would be expensive, but he points out that the amount of money of a little over 3,000,000 yen, which the department of agriculture allotted for the reclamation of 620,000,000 acres of land in nine years is insignificant compared with the revenue she devotes to battleships. At Port Arthur I was much impressed by the vast areas of unoccupied and uncultivated land, and upon inquiry found that the population consisted of only 10,000 Japanese and 15,000 Chinese. In the adjacent country there was easily room for thousands more.

6. The narrow streets of Kyoto, Tokyo, and other cities are habitually crowded with multitudes of children and babies which naturally give the impression to the passing tourist that Japan is teeming with a population huddled promiscuously together. Observations in the country away from the cities show the contrary. Japan desires to expand into other countries in order to get a foothold in them—into China, Siberia, Kamchatka, and islands of the northern Pacific. She wants to flow to the southward into the Philippines, the Pelew Group, the Carolines, and the Marshalls. Wherever she goes she throws a veil of secrecy around her proceedings, and from outside that screen she protests to all the world that all's well inside: no forts, no mines, no wireless. A chance landing recently on the shores of Yap and Truc of two intelligent American Marine castaways has shown that there is strong presumptive evidence, at least, that the Japanese statements regarding the innocency of these islands have exactly the same value as their repeated assertions that Japan has no territorial ambitions.

It will be recalled that these Marines reported that there were wireless stations of 1,000 miles radius installed on the islands of this group, but what is of much more significance—the Kanakas told them that there were "many, many guns on Saipan," which is only about 90 miles from Guam. It would be easy and inconspicuous to land guns of heavy caliber on the island to be used later to fortify Guam against us. Furthermore, one of the men was told in Yap that the Japanese were fortifying upper Palao (Pelew). The *South Dakota* passed within 4 or 5 miles of the southern end of the Pelew group last October, and while I noted the commercial activity in the harbor, I observed no fortifications.

7. Nothing that can serve to promote friendship between America and Japan consistent with our own ideals and traditions should be neglected, but I believe this can only be accomplished by a full and complete understanding between authorized representatives appointed in conference to discuss and adjust every point of difference between the two countries. This can not be done by the ordinary procedures of diplomacy: those channels are too well worn, too conventional, and if I may be permitted to so express it—too misleading. The solution of the problems which vex the relations of the two nations lies in the appointment of a joint high commission, composed of the most representative men, regardless of party politics, who have the full confidence of their countrymen.

8. There is as much difference between the mental perspective of the Japanese and ours as there is in our manners, social customs, and the color of our skins—to quote Mr. Shidehara—and for this reason any conference that would find a solution to the various questions must at the outset establish a common plane of reference to which these questions can be referred. In other words, each side must get the mental focus of the other.

9. It is common saying that there is no other country about which so much is written that is incorrect, either in praise or censure. The Japanese are

not supermen; they are not especially clever or keen in perception; they are not originators. They are ambitious, hard working, and capable of standing hardships, but they are mechanical like the Germans, and are not quick to meet the unexpected. They do not merit the extravagant praise which had been given their development. Their telephone, telegraph, and postal systems throughout Japan are notoriously unreliable and inefficient. Even in the large commercial cities one has only to step across the street from the foreign settlement into the native quarter to go back fifty years.

10. Japan's overwhelming successes in the wars with China and Russia gave her a place in the sun, and started her on her road to empire. *She has been rattling the saber ever since.* Japan is essentially a military nation, modeled along German lines. She had a large and well-equipped army, a powerful navy, and a secret service which is credited with phenomenal efficiency. It must be remembered, however, that her army and her navy, have as yet, met in battle only forces of little or no morale, led for the most part by corrupt and incompetent men.

11. I have some personal knowledge of her secret service, and can not think much of its reliability, if the following is a fair example of the work of her spies: Last June I was shown, while in Peking, a telegram from Gen. Oi which had been intercepted in transmission from Vladivostok to Harbin, in which he said: "The presence of the U. S. Flagship *South Dakota* leads me and the political commissioners to have certain doubts. Our secret service has established the fact that the admiral is having very frequent intercourse with the provisional government, against which we have taken the necessary measures in the interest of the Japanese Government." As a matter of fact I had never had any intercourse with the provisional government with the exception of the formal calls exchanged when I first arrived at Vladivostok. It so happens that the date of this dispatch was the same as that on which the general entertained the admiral at an unusully elaborate luncheon.

12. Any opinion based upon a few days in Japan, either of the tourist who gets his impression from the impecunious shopkeepers, and the atrocious manners of the native passengers in the second class railway carriages; or, that of the invited guest who is entertained lavishly by court officials and wealthy citizens must be accepted with caution. The people who are the best judges and whose opinions are most valuable are foreigners, particularly merchants and missionaries who live among the Japanese and are familiar with their outgoings and their incomings.

13. In view of the relations that now exist between the United States and Japan, it is of special importance that we endeavor to understand the Japanese character, for the better we understand each other the less chance there will be of rupture. To this end it would seem desirable to frequently send special committees to Japan, whose real object would be to study the people and the country. Japan pursues this policy toward us. As commander in chief, it is my desire to have the ships of this force visit as many ports in Japan as practicable, and officers are encouraged to travel in the interior and observe closely. Every ship is required to submit thorough and systematic intelligence reports.

14. No Japanese official makes a speech or writes an article on international relations that he does not dwell on:

(*a*) The sincerity of the Japanese people.

(*b*) Their frankness and open dealing.

(*c*) The sacredness with which they adhere to all their treaty obligations.

15. A high commission appointed to settle our differences with Japan will have to begin by brushing away these cobwebs of self-righteousness before an amicable agreement is possible. Japan must be made to realize that the world does not accept her at her own valuation. These assertions are repeated and reiterated until they have become fixed ideas in the Japanese mind, notwithstanding that every intelligent Japanese knows, and the world knows and condemns, the part Japan has played in Korea; knows that she has not fulfilled the pledges she gave to the four powers regarding China, and of her operations in Siberia, where she has associated herself with such outlaws as Semenoff, Kalmikoff, and Rozanov.

16. Viscount Ishii's speech at the Waldorf, September, 1918, when he enunciated the Japanese Monroe doctrine for China, was the climax of irony, coming, as it did, after the presentation of the 21 demands, and when viewed again in the light of events of the last two years.

He said in part:

"Circumstances for which we were in no sense responsible gave us certain rights on *Chinese territory, but at no time in the past and at no time in the future do we, or will we, seek to take the territory from the Chinese or to despoil China of her rights.* We wish to be, and to always continue to be, the sincere friend and helper of our neighbor, for we are more interested than anyone else, except China, in good government there; only we must all times, for self-protection, prevent other nations from doing what we have no right to do. Not only will we not seek to assail the integrity and sovereignty of China, but we will eventually be prepared to defend and maintain the same integrity and independence of China against any aggressor."

17. Ignoring the facts of contemporary history, Baron Makino stated in an interview in Paris in April last year, "There is no example in history of Japan breaking her word." A few weeks ago, when Tokyo was framing what the press termed an evasive reply to the Washington note on the Saghalien question, the Japanese ambassador Shidehara wrote in the Outlook that "Both countries must adopt the policy of absolute frankness. We can hope for no final solution until our cards are on the table."

18. The individual penetration of China, without regard either for her sovereignty, her independence, or of Japan's own pledges for the open door and equal opportunities of all nations may be compared with the invasion of Canaan by the Israelites, who, under their war lord Joshua, fought their way into the promised land after pledging themselves to keep to the king's highway, and not even take water from the wells. Until Japan squares her actions with her words, until she suppresses unfair trading, illegal traffic in drugs, unjust discrimination against foreign trade, she can not hope to escape international *suspicion, mistrust, and accusations of insincerity and deception.*

19. The Japanese know the opinion in which they are held by foreigners in the Far East, and they bitterly resent it, for they are an extremely sensitive people, quick to resent a slight. Outwardly, of course, business and social intercourse is undisturbed, but there is an undercurrent of ill-feeling which is exhibited in many minor ways. The rudeness to which foreigners are subjected in traveling has become so flagrant that within the last few weeks it was proposed by Mr. Motodo, one of the Imperial Railroad officials, to restore first-class carriages, which have been taken off since the beginning of the war, but this admirable suggestion was so strongly opposed that it has been withdrawn.

20. When the *Huron* was at Kobe, no effort was made by the port authorities to clear a landing for boats, although this was done for the Japanese warships, and furthermore the underlings of the customs insisted on examining the parcels

of officers in uniform. Although these annoyances promptly ceased when attention of the governor of the province was called to them, they indicate the feeling toward Americans. Many instances of this kind could be cited.

21. The following personal experience illustrated the Japanese railway manners of the day: A party of officers and their families were returning to Kyoto from Nava. At a way station several well-dressed Japanese youths entered the train. It was Sunday; it was also cherry-blossom time, and the young men were under the influence of Saki. The moment they saw the uniform they began singing "Sherman's March Through Georgia" in Japanese, which was followed by loud laughing, gestures, and remarks to the amusement of the other passengers. One of the men even went so far as to shake his cigarette ashes on the dress of one of the ladies.

22. The Anglo-Japanese alliance is unpopular with the English out here. They say that the people at home do not understand the Japanese and have an unwarranted friendliness for them; that at first in 1902, when Russia loomed large on the horizon, there was some reason for the treaty, but now, in view of the improved and strengthened relations with America, and our identical interests in the Far East, the treaty is unnecessary. The editor of the London Daily News, in discussing the treaty, says that Japan has torn it into tatters by violating its provisions to maintain peace in China, and to keep the "open door," to preserve the independence and integrity of China, to protect the common interests of all the powers in China, and to defend the special interests of the contracting parties. He adds that she has made waste paper of the treaty.

23. Several events during the last two months gave a fair idea of the Japanese attitude and throw light on the character of the officials, acting, no doubt, under instructions from Tokyo. The arrest and detention in a criminal cell of a prominent British merchant of Antung without the option of bail is a case in point, and has attracted world-wide attention. Whether or not the arrest was justified, the methods employed have brought forth a torrent of fierce criticisms, and the Shanghai Chamber of Commerce has formally protested to the British consul general. The affair has served to greatly intensify the anti-Japanese feeling in China. The shooting affair in Vladivostok early in July, in which Japanese soldiers and American sailors were involved is another incident. Apologies, explanations, and regrets are usually forthcoming, *but the irritation never ceases.* Their latest effort is the seizure of the astronomical instruments which Germany was compelled to return to China by the terms of the peace treaty. Germany complied by sending them back in care of the new German ambassador, via Japan! *Japan says she will hold them until China consents to negotiate the Shantung question.*

24. Japanese conduct of affairs in Peking during the so-called war of the Tuchuans during July and August is especially illuminating. It is accepted as a fact by the highest authority that the political troubles in north China, which have been brewing for years and culminated last month, were instigated and financed by the Japanese acting through the Anfu party. In Marchal Tuan's army, and also in "Little Hsu's" there were soldiers trained by Japanese officers, and I have been informed that dead bodies of Japanese officers and men were found on the battle fields near Peking.

25. When Gen. Wu-pei-fu overthrew the Anfu party, the Japanese realized that their expectations of governing the so-called Peking government had ended. Their representatives in Peking immediately changed front. Minister Obata pretended great surprise at the course of events and wondered what it was all about, and why his legation had not been informed of the trouble. A few days

before hostilities began he stated to a colleague that he had been instructed by Tokyo to caution all Japanese citizens to observe the strictest neutrality, and he pretended not to understand what it meant. When Marshal Tuan had returned to Peking after his defeat it was rumored that "Little Hsu" had been seen at the Hotel des Wagons-Lits in company with a Japanese officer, and when Gen. Chantee-lin was asked if he knew where Hsu was, he replied at once: "In room No. 3 of the Wagon-Lits." For several weeks the whereabouts of Hsu and other Anfuite leaders were unknown. These men are regarded by the Chinese authorities as criminal offenders and a price was put on their heads. It was surmised that the Japanese were connected with their disappearance.

26. On August 10 Mr. Obata in a note to the foreign office informed the minister of foreign affairs that he "has decided to render them accommodation in the compound of the legation guard." This action of the Japanese diplomatic representative has incensed the Chinese cabinet, especially as he refuses to comply with the Chinese demand to give them up, and a portion of the foreign press are urging Mr. Obata's recall.

27. I was recently told by an attaché that the British ambassador to Tokyo told him that during the war, about 1916, when the tide was apparently going against the Allies, that he (the ambassador) could get no satisfaction from the foreign office on any subject, and one day the minister of foreign affairs said to him in substance: "I don't know but we have made a mistake in siding against Germany." Mr. Gardiner's observations in the London Daily News of July 10 describes this attitude of Japanese officials—to say that Japan was lukewarm in the war is to say the least that could be said. Her attitude throughout the war was obscure and disquieting. She *was watching and waiting*, and there was little attempt to conceal the large element of sympathy with Germany which prevailed in the country, and doubt whether the Government had "backed the wrong horse."

28. It is Japan's policy to keep the pot boiling, and it is her strategy to direct attention to lesser objects when she is trying to gain greater ones. *What is heard of Shantung since the Saghalien question had been raised?*

29. These comments are not submitted in a spirit of hostility to the Japanese. I have received too much kindness and attention at their hands to have any other than a feeling of friendship for them. In previous letters I have reported the unusual hospitalities which have been extended to the commander in chief by the Japanese officials during the last year. At Port Arthur a few weeks ago Vice Admiral Matsummura showed the same cordiality and friendliness. He detailed an officer as aid and gave every facility for seeing the various objects of interest. The governor general, Yamagata, who was absent attending Parliament in Tokyo, placed at my disposal his summer villa. At Dairen the Chamber of Commerce gave a luncheon. I have been greatly impressed by their friendliness, and, as as stated above, I do not believe they want to fight us. It is my wish to do everything possible in my present position to promote friendly relations with these who should be our friends.

30. But I can not close my eyes to the fact that they mean to dominate in the east, and that we shall have to accept that domination or we shall have to have recourse to arms.

31. It would be a mistake to be misled by the amiable speeches of prominent Americans who have visited Japan and seen only its attractions, who have been impressed with the courteous and courtly manners of the officials and the refinement and culture of representative citizens, and who have enjoyed the lavish hospitality of their rich hosts.

32. Unless there is a great change in our relations with Japan, when she is ready to try conclusions with us (and watchful and careful observers put the

time at about one year hence) she will aggravate the United States beyond the point of toleration and we will be forced to deliver the ultimatum; then she will strike without further warning. Thus she will have the advantage of engaging in a defensive war. Our ships and our armies will have to carry the war over seas. The Japanese will not come to us.

33. It seems to me that the greatest danger of war lies in the conceit and the cocksureness of the Japanese military party. It is impossible, of course, to know just how many of their general officers believe that Japan can defeat the United States, but a prominent Japanese has recently stated that Japan could easily take the Philippines in 48 hours.

34. *We must be prepared.*

JAPANESE ACTIVITIES.

Source: Reliable.

(14396.)

12 April, 1921.

A recent marked increase in the political and espionage activities on behalf of Japan has aroused considerable interest and not a little apprehension among members of the British Government and British Army and Navy officers who are in touch with the situation.

The visit of the crown prince of Japan to England, which will take place the middle of May, has been used as a pretext for a visit to England of numerous alleged Japanese newspaper correspondents, many of whom are already here.

Every Japanese who leaves Japan for the United Kingdom or who secures a visé to his passport from any British official in any other country is immediately signaled to London. His record is looked up, his associations noted, and if it is considered of sufficient importance his movements in this country are carefully watched.

The names of the suite of the Japanese crown prince have been sent to the British Government for approval, and they will all be admitted to the United Kingdom. There is one among them, however, who is not favorably looked upon by the British authorities, and he will be carefully chaperoned. This is Admiral Takashita, now stationed at Gibraltar. He will be picked up by the convoy bringing the prince to England and will be with the party while in the United Kingdom. This man was caught by the British during the war traveling on a false passport without apparent reason and under conditions which gave rise to suspicion. So far as the British authorities know every member of the crown prince's party, with this one exception, is harmless, but the whole party will be most carefully chaperoned while in England under the guise of entertainment. They will receive most distinguished attention and will *probably never be left alone.*

As soon as it was announced that the new British naval budget included the building of four new capital ships the Japanese Gov-

ernment dispatched six naval construction experts to secure the plans of these ships if at all possible. These men are all known to the British Government and will be watched while here.

One Japanese who recently resided in Edinburgh appears to have traveled under several aliases and to have no visible means of support or particular business to occupy his time and attention. His actions gave rise to certain suspicions, and among his papers was found a complete list, describing all the British warships in that neighborhood down to the last naval tender.

Marquis Nakano Midado, now resident at 125 Cromwell Mansions, Cromwell Road, is a Japanese of royal connections, who is in England ostensibly for the purpose of studying court etiquette. Owing to his high social position and rank and his credentials from the Japanese Government he is admitted to the best English society and has access to all the leading British Government officials. The British Government is confident that this man is the chief political agent in the United Kingdom. It has been found that he is very intimate with a woman named Miss Whitehead, of 54 Cromwell Road. She is an elderly woman and is ostensibly governess to a family of Russian children. The father of the children has been refused admittance to the United Kingdom, and is therefore not living here.

Miss Whitehead is paid £400 per month, or about five times the usual remuneration for such a position. The principal activities of the marquis, in addition to his observation upon British affairs, are the furtherance of the proposed Japanese-German-Russian alliance which is advocated by a great many Japanese, and has been seriously considered by many Germans and Russians. Direct evidence of this agitation has been secured in Brussels, which is the headquarters of Japanese activities in Europe. In the city of Brussels the Japanese have gotten together all the Germans and Russians possible, and there is close communication between these groups of nationalities.

Japan is also anxious to secure continuation of the Anglo-Japanese alliance and it is estimated that they are spending at least £2,000 a month on propaganda work in favor of renewing the treaty, this money being spent mostly in London. One agent of the Japanese Government has been successful in getting a number of articles into the London Times.

There appears to be no doubt but that a large and influential faction of Japanese are seriously looking forward to a possible German-Russian-Japanese alliance as a probable event of the near future; and hundreds of Japanese are working in all of the large countries along this line, in addition to keeping their government informed as to local affairs.

There is a general agreement among well informed Englishmen that Japan has little or no intention or anticipation of an attack upon the United States or any western nation, but that the Japanese expect the time to come, and possibly soon, when their actions in the Far East may be seriously challenged, either by the United States or other powers, and she is preparing to defy such a challenge should the issue be worth it.

The idea that Japan shall become the dictator of the Far East is fixed in the minds of every Japanese statesman and business man; and apparently the Government believes that the only way she can obtain her ambition is to become sufficiently strong from a military point of view to hold her own in any dispute within what she conceives to be her proper and legitimate sphere of influence.

JAPAN—NOTES ON ACTIVITIES.

Source: Reliable.

(7010–E.)

22 April, 1921.

There are a number of Japanese inspectors, etc., at the works of Vickers (Ltd.), Barrow, who are interested in various naval and military matters, among which are as follows:

(*a*) Nonrigid airship similar to the British S. S. type which is just completed at Barrow.

(*b*) Complete design plans of submarines of a slightly enlarged L class; it is understood that these plans are being prepared by Vickers (Ltd.), and the submarines are to be built in Japan.

(*c*) Various types of reduction gears.

(*d*) Various types of submarine engines.

There have been, and still are, a number of Japanese inspectors, etc., in Glasgow interested in the following activities:

Optical equipment at Barr and Stroud and at Kelvin Bottomley and Bairds. This includes practically all types of naval optical equipment, particularly submarine periscopes. It is also understood that Japanese representatives are in close touch with aircraft and airship development at Beardmores where *R–36* has just been completed.

Reasonably reliable information has been received by this office that a Japanese party (probably Japanese naval commission) left Japan the day after the naval estimates were presented to Parliament, indicating that the British Admiralty would lay down four capital ships of the improved *Hood* type. It is further understood that this commission is charged with following as closely as practicable the progress of construction of these vessels with particular

idea of obtaining such data as they are able to obtain relative to the improved features of design.

JAPANESE ACTIVITIES.

Source: Reliable.

(7010–E.)

16 April, 1921.

It is learned from an authoritative source in Germany that the Japanese are including in their recent aeroplane contracts clauses which specify that material under order must be completed by the 1st June, and be ready for shipment; that is, must have completed its journey and be off the sea at its destination on the 1st of August.

It is also learned that the Japanese are present in central Europe in very great numbers and are concerned chiefly with contracts for material. One big German manufacturer of chemical machinery stated that three Japanese commercial deputations had tried to see his plant, but that he had refused them all because he mistrusted them.

JAPANESE-BELGIAN RELATIONS.

Source: Reliable.

(14435.)

16 April, 1921.

During the past two months there have been four changes in the personnel of the Japanese Legation in Brussels. Four secretaries who had been stationed here for some time past have departed for the United States. They all speak English perfectly. The four new members of the legation staff all speak English and one speaks German. They are all perfecting themselves in French at the Berlitz School of Languages.

During the past two months the Japanese colony in Belgium has been considerably increased. Quite a large number have appeared in Antwerp, and in Brussels the number of sight-seers and tourists has noticeably increased.

A number of commercial men are studying English and French at the Berlitz School.

A Japanese steamship agency, represented by Steinmann & Cie., 24 Quai de Jordeans, Antwerp, has announced the establishment of a steamship line plying between Antwerp and Japan.

Considerable comment has been caused by the large increase in the personnel of the Japanese Legation. This may of course be simply a prelude to the raising of the legation to an embassy, which is to take place at an early date.

IMPORTANT EVENTS IN JAPAN.

Source: Reliable.

(12904.)

26 March, 1921.

I. POLITICAL INFORMATION.

Political observations and developments (domestic).—So far as general administrative affairs are concerned, the Government has during the last few months been occupied chiefly with the preparation of the budget for the ensuing fiscal year. With no new sources of taxation to turn to, with little hope of improvement in the unfavorable economic situation, it was not an easy task to adjust to the prospective revenue the increased demands of the various Government departments necessitated by the rise in operating expenses and by new undertakings to meet the demands of the times, including a formidable program of armaments represented by the military and naval authorities to be the minimum essential for national security. The revenue and expenditures of the budget finally drafted balanced at $781,000,000, an increase of approximately $150,000,000 over the working budget for the current fiscal year. In view of the economic situation, such a comparatively large increase in the estimated revenue seems strange, especially as regards receipts from the income tax, which, contrary to what might naturally be expected, is the item in which the greatest increase is estimated. The method of compiling the Japanese budget, however, is always somewhat of a mystery to those outside the inner Government circles, and therefore it can only be surmised that the authorities have decided to adopt a less lenient attitude toward tax evasion, a practice which has hitherto been widely prevalent.

There are many evidences that the burden of armaments is growing more and more oppressive. Forty-eight per cent of the expenditures in the general budget for the ensuing fiscal year are devoted to the war and navy departments, while the expenses for the Siberian expedition, which are defrayed out of a special budget, will bring the total direct expenditures for military and naval purposes to over one-half of the State expenditures. This percentage assumes an added significance when it is considered that a greater part of the undertakings which, in other countries, are paid for by local administrative units are here included in the accounts of the central Government. Moreover, there is good reason to believe that the army and navy have sources of income which are not included in the budget, such as, for instance, unexpended balances of appropriations made in previous budgets. It is furthermore generally understood that the meager salaries of higher army and navy officers are supplemented by generous donations from the revenues of the imperial household, which are very large.

As a result of these heavy drains on the resources of the nation, social and economic development is being seriously handicapped. For instance, the lack of funds for the construction of good roads, and for remedying the woeful inefficiency of the postal, telegraph, and telephone service is causing serious inconvenience to commerce and industry. Inadequate and expensive means of communication are as important a factor as burdensome taxation in increasing the cost of production. Education also suffers from the Government's zeal for greater armaments; thousands and thousands of young men and women are deprived of a higher education because of the lack of schools. This fact is an important element in the growth of social unrest among the younger generation.

One of the most significant events of the year was the "installation of the spirit" of the deified Emperor Meiji in the immense new shrine in the outskirts of Tokyo, which has been under construction for the last six years. The Emperor Meiji is venerated as one of the greatest of Japanese rulers. Although, on account of the seclusion in which the imperial family lives, little is known to the public of the real man and his actual work. It was during his reign (1868–1911) that the stupendous change which marked the transition from feudal to modern Japan took place. The rapid progress of Japan during that time is ascribed by the people more to the "virtues" of Emperor Meiji and of the imperial ancestors than to the character and ability of that unique group of men who guided the State through the period of national reorganization and through two victorious foreign wars.

The dedication of the shrine was made the occasion of universal rejoicing and of demonstrations of loyalty to the imperial family, showing clearly that despite the headway that radical views are now making among certain sections of the people, the masses still cherish a sentiment of profound loyalty and veneration for the throne, which is the basic rock of ancestor worship and national tradition. The deification ceremonies, which were declared national holidays, occupied the first three days of November. Over $100,000 was spent on the festivities by the Tokyo municipal and prefectural governments; 300,000 charms and talismans, made by the Shinto authorities of the grand shrine at Iso, were given to the pilgrims, who on the first day, despite a continuous rain, numbered over half a million. Thousands of young men gave their labor free in the construction of the shrine. Reckoning this labor at its monetary value, the total cost of the shrine would, it is estimated, amount to about $20,000,000. So dense were the throngs along the approaches to the shrine during the three days of the celebration that the police authorities were utterly unable to maintain order, with the result that over two hundred serious injuries, including several deaths, occurred.

Another development in connection with the dedication of the shrine was the discovery that officials of the city government had been guilty of peculation in the contracts for building the roads leading up to the shrine. This discovery led to others, as a result of which the prestige of the Tokyo municipal assembly suffered a severe blow. Although scandals of this nature are of frequent occurrence in Japan, the present affair, not only because of its connection with a matter so sacred as the Moiji shrine, but also on account of its unprecedented dimensions, has evoked unusual popular indignation. It was found that there had been irregularities in many departments. For instance, it was revealed that the city sewerage bureau had been in the habit of misappropriating funds to the extent of half a million dollars annually. Capt. Shiroki, chief of the criminal section of the metropolitan police (the police administration has no connection with the municipal government, but is under the direct control of the department of home affairs), took occasion to say that there was not a single municipal enterprise, which, if probed far enough, would not show irregularities.

In November 27 Viscount Tajiri, the mayor of Tokyo, regarding himself responsible for the corruption prevailing in his administration, resigned, his action being followed a few days later by the resignation of the president of the municipal assembly and of two deputy mayors. There was a widespread demand for the retirement of the entire municipal assembly, but no action was taken by the department of home affairs, which had the power to dissolve it. Nevertheless, arrests of prominent citizens have been made from time to time as the investigation proceeded. It is worth noting that a large number of the persons who were found to be implicated were affiliated with the Seiyukai party. A number of persons were suggested as successors to Viscount Tajiri, but none of those who were seriously considered were willing to undertake the onerous responsibilities of the position. Baron Goto was finally prevailed upon to accept the post of mayor, and the public, which had great confidence in his ability and force, became reassured that the situation would be effectively dealt with. Upon assuming office, in order to set an example to his subordinates and purify the municipal administration, he announced that he would contribute the amount of his salary to charitable enterprises. Although full credit may be given to Baron Goto for his earnestness of purpose, it must be remembered that prevalence of corruption in municipal governments in Japan is due largely to the system which exists of dividing the voters according to wealth into three classes, each class electing one-third of the aldermen. Membership in the first class is so restricted that an alderman may be the choice of only three men.

In the last quarterly report reference was made to the trend of present-day popular thought and to the efforts of the authorities to check the growth of radicalism. The stern measures of repression that have been adopted have served to create fresh irritation, and to swell the ranks of the disaffected persons who are regarded by the police as harboring "dangerous thoughts" include socialists of the Marxian school, followers of the ideal anarchism of Kropotkin, disciples of Bertrand Russell, as well as reformers who only desire to improve the lot of the masses. They are, however, all classed together by the authorities, and regarded as objects of suspicion. In consequence they have been to a large extent thrown together and obliged to make common cause, with the result that to-day the great majority of those who are dissenters from the existing order are more or less regarded as tinged with socialism. Moreover, the immediate aims of those who are not strictly speaking socialists are practically identical with those of the socialists. For instance, they all demand the immediate institution of universal suffrage, with a view to securing a foothold in the Diet; they are all agreed upon the eight-hour day and the enactment of other measures for the welfare of the laboring man and society in general. For these reasons a brief description of Japanese socialism will suffice to give a general idea of the radical movement as a whole.

Japanese socialism differs in many respects from European and American socialism. While Japanese socialists have been influenced to a large extent by occidental thought, this has been modified to a considerable extent by fundamental conceptions of national polity based on ancestor worship and the family system, which are too intimately a part of the life of the people to be easily affected by foreign ideas. The majority of Japanese socialists, therefore, do *not* regard the maintenance of the imperial cult as necessarily incompatible with the realization of their ideals. Indeed, one group preaches a sort of state socialism, wherein all lands would be placed in the hands of the Emperor and allotted temporarily to his subjects. This, of course, would be nothing more than a reversion to the system which prevailed in the earliest times. The primary aim of practically all groups is to effect the abolition of the class system and of the bureaucracy (that is, the alliance between the civil and military bureaucracy and big business), which has entrenched itself in power by posing as the priesthood of the imperial cult. This is really why the socialist movement gives the governing classes so much concern. An important difference between western and Japanese socialism is that in the latter the idea of internationalism is lacking. This is because the Japanese people have little sense of community with other nations, due not only to their long period of isolation, but also to the barriers of language, culture, and race. Moreover, their exclu-

sion from the lands of certain white peoples, for which they comfort themselves with the traditional conception that the Japanese are a race apart, descended from the gods, adds to their feeling of aloofness. For these reasons Japanese laboring men do not feel that they are united in common bonds of sentiment with the people of their class in other countries. The socialist movement in Japan, although gradually spreading, is as yet confined within narrow limits. The leaders of the movement are for the most part educationalists and publicists; they are visionaries with little aptitude for practical affairs. Although doubtless the majority of them are courageous in a passive way and would not shrink from sacrifice for their cause, they lack initiative and resolution. Without organization and without open public support they are no match for the police who are ever on the alert to break up socialist meetings and to confiscate propaganda literature. The leaders, moreover, find that their philosophy is little understood by the people beyond the fact that it promises them relief from the drudgery of their present life. The converts are at best half-hearted and unwilling to take more than a passive part in the realization of their aims.

A phase of the socialist movement is the organization of labor in which considerable progress has already been made. About one-third of all male industrial workers are now affiliated with unions, while women workers, although they are not members of any organization, are more or less indirectly affected by the labor unions. These labor unions are probably destined to take a leading part in the socialist movement, for it is the industrial workers who are the most practical and insistent in their demands. The agricultural tenant class, too, has of late been manifesting signs of unrest and appears to be ripe for conversion to socialism. This class, however, is naturally more backward and less liable to come into contact with extraneous influences than the industrial workers, and therefore can not be expected to do more than follow the lead of the latter. Under strong leadership the two groups could become a powerful social and political factor in this country.

Korean affairs.—It may be noted that the election for members of the municipal and village councils whose establishment was referred to in my last quarterly report, took place on 20 November. Returns covering the twelve municipal districts show that a total of 134 Japanese and 56 Korean members were elected; in Seoul itself the municipal council will consist of 18 Japanese and 12 Koreans. Returns from 20 village districts show 111 Korean and 101 Japanese members elected. In view of the fact that the Japanese population numbers about 3 per cent of the total it might appear that there should be more Koreans on the councils, but as the public service corporations and other large financial enterprises are

largely either owned or operated by Japanese, the result is that the Japanese constitute a large proportion of those who actually enjoy the franchise. Although the authorities have expressed satisfaction with the results of the election, the problem of gaining the confidence of the Korean people by means of the local councils is not an easy one. The older and more responsible Koreans refused to stand for election partly through natural conservatism but chiefly because they did not wish to be accused of being pro-Japanese. In the municipalities, where it will be some time before the Koreans can secure a majority in the councils, this is particularly true since they will be held responsible for whatever measures are passed by the Japanese majority. The real test of the success of the system will therefore take place in the village councils where the Korean members have a majority.

Relations with foreign countries.—(*a*) *The Chinese loan consortium.*—Little public interest has been manifested in the progress of the consortium except when the foreign office, in accordance with the agreement reached between the four interested powers, issued on November 20 a public announcement regarding its organization and purposes. At this time a certain amount of adverse criticism was aroused on the ground that the public had not been more fully informed on the details of why Japan had withdrawn her claims respecting Manchuria and Mongolia. One leading journal, however, expressed satisfaction, noting that monopolistic rights in China had proved detrimental not only to China but also to the country possessing such rights.

(*b*) *Relations with China.*—The most important development in connection with Chinese relations during the quarter under review was the Japanese invasion of Chinontae. This district, which lies across the northern frontier of Chosen, is largely peopled by Koreans, who migrated there either because they had for other reasons found life under Japanese rule intolerable. The question of whether Japan had the right to exercise extra-territorial jurisdiction over them has been the subject of a long standing controversy with China. Among the 300,000 Koreans in Chinatae there were a considerable number of active sympathizers with the Korean independence movement, which had been kept alive in part through their efforts in serving a channel of communication between independence leaders in the peninsula and nationalists organizations abroad. Their activities also included the organization and training of the nucleus of a nationalist army to be held in readiness for the day when a move for independence might offer a reasonable prospect of success. These activities had for some time past been giving the Japanese Government serious concern, for it was felt that unless they were brought to an end, inter-

course between Korea and Chienta effectually blocked, it would be difficult completely to stamp out sedition in the peninsula.

On 2 October mounted Chinese bandits raided the town of Hunchun, which lies in close proximity to the Korean border, where they burned the Japanese consulate and other buildings and killed a number of inhabitants, among whom were fifteen Japanese. The bandits were said to be in league with Korean nationalists and Russian bolsheviks, and were scattered in small groups throughout the Chientao region to the total of about 17,000. The raid on Hunchun gave Japan the opportunity she was seeking to intimidate the Korean nationalists and remove the menace from Korea. This, as subsequent events proved, was her main objective in Chientao, the Chinese bandits coming in for little attention. The Japanese Government immediately sent a battalion of troops across the Korean frontier and notified the Chinese Government of the action taken. Although the Chinese Government acquiesced in this preliminary move, its subsequent attempt to protest showed that it was not prepared for what followed. Notwithstanding the fact that the Chinese Government refused to consent to the despatch of additional forces, the Japanese Government proceeded with its plan on the ground that the measures it was taking were absolutely necessary for self-protection. By October 12 four and a half battalions of Japanese infantry were operating on the Manchurian side of the border, spread out among the towns where the Japanese consulates were located. In order to make a demonstration of force in the disturbed area one brigade of 4,000 men was sent from Vladivostok and landed at Possiet Bay. It proceeded thence along the frontier through Hunchun and around into Chientao. In addition to these forces, one infantry battalion from the 16th Division was despatched from Mukden and one cavalry regiment from Kungchulin, near Changchun, to the district across the more southerly section of the Korean border. The Chinese were called upon to send from Kirin one infantry brigade and one mixed brigade for the purpose of assisting in the operations for rounding up the Chinese bandits, which left the Japanese forces freer to deal with the Koreans. On October 14 the foreign office issued a statement explaining that the action of the Japanese Government in sending an expedition into Chientao was due to the ineffectiveness of the efforts of the Chinese Government to put a stop to the activities of the Korean rebels and other outlaws. The statement concluded with an assurance that the troops despatched would be promptly withdrawn as soon as the danger was removed and peace restored.

Nowhere did the Japanese troops meet with any organized resistance. The bandits and armed Koreans dispersed to the mountain

fastnesses where they could not effectually be reached. The Japanese expedition then proceeded to restore order by instituting a reign of terror among the remaining inhabitants. All accounts of disinterested observers agree that the troops committed atrocities of a most revolting nature. Not only did they destroy houses, churches, schools, and harvested crops, but they also tortured and massacred innocent people, including women and children. Entire villages were laid waste and thousands of people rendered homeless and destitute. The object of these actions was clearly to teach the Koreans a lesson regarding the might of Japan so as to discourage future activities for the promotion of Korean independence. Before winter set in the Japanese punitive expedition had accomplished what it had set out to do, and announcement was made of the fact that the Japanese expedition would be withdrawn forthwith. Two battalions, however, were retained ostensibly in order to protect the Japanese consulates and the Japanese residents, on the ground that Japan could not be satisfied with mere verbal guarantees on the part of China to take adequate measures to guard against the recurrence of similar incidents. The primary object of this disposition was to force China to agree to the conditions that Japan wished to impose upon China in connection with the settlement of the Hunchun affair. These conditions comprised guarantees for the future in the way of an adequate Chinese police force, the payment of an indemnity, arrangements for cooperation in the policing of their respective frontiers, and a recognition of Japan's right to send troops across the border at any time in the future that Japan deemed necessary. It is understood that China agreed to all of these conditions except the last. At any rate, in spite of protracted negotiations no settlement has yet been reached on the question. In the meantime barracks have been equipped for the two battalions, which is evidence that the Japanese troops are preparing for a protracted stay.

The Japanese Government having become somewhat concerned as a result of the criticism which the reports of the atrocities committed by the Japanese expeditionary force had aroused sent a military commission headed by Col. Mizumachi, formerly military attaché at Washington, with the announced object of investigating the charges that had been made. Col. Mizumachi's main purpose was, according to his own statements, to act as a liaison officer between the Japanese army and the foreign residents of that region and to clear away misunderstandings that had arisen in regard to the action of the Japanese troops. His method of clearing away misunderstandings was, to say the least, unusual. He wrote a letter to Mr. Foote, a Canadian missionary stationed at Chientao, outlining the purposes of his mission and warning missionaries against giving

assistance to the Korean independence movement and encouraging anti-Japanese sentiment. In the letter he declared that unlike Gen. Dyer in India, the Japanese expedition had taken care not to kill innocent people. He then proceeded to point out that if the missionaries should give assistance to the independence movement, the Buddhists in Japan would find a legal reason to assist the fomenters of the noncooperation movement in India, and that similar steps could also be taken in the case of Ireland. This letter was made public by Col. Mizumachi, and sent over the Japanese field telegraph wire by the correspondent of the Kokusai News Agency, who accompanied Col. Mizumachi's expedition, to Japan where it naturally created a sensation among the foreign residents and evoked an official inquiry from the British Embassy as to whether it represented the Government's views. The foreign office after some delay due it is reported to the uncompromising attitude of the war office issued a public statement disassociating the Government from any connection with the statements in Col. Mizumachi's letter which were, it is stated, entirely his own personal opinions. There is, however, no record of Col. Mizumachi's having been reprimanded by the war office for his indiscreet utterances.

Another incident in Japan's relations with China to which considerable prominence was given in the press was the escape, on November 14, of Gen. Hsu Shu Cheng, a leader of the Anfu faction, from the Japanese Legation in Peking, where, following the coup d'état of June, he, together with eight other of his followers, had been given asylum, notwithstanding the demand of the Chinese Government that he should be given up. The fact of the escape was communicated two days later to the Chinese Government by Mr. Obata, the Japanese minister, whereupon the Chinese Government made further representations to the legation protesting that it had been remiss in exercising due surveillance over the prisoner and demanding that the eight other refugees be delivered up. Mr. Obata refused to accept responsibility for Hsu's escape and at the same time refused to give up the other men. It is reported that Hsu eventually made his way to Shanghai and it is believed in some quarters that, with the assistance of the Japanese military group, Hsu will bring about a revival of the Anfu party, with which will be affiliated the new military governors of the southwest.

Although there have been no further developments in connection with the Shantung question, two pending questions of minor importance were finally disposed of. An exchange of notes on November 12 between the Japanese Legation and the Chinese foreign office formally settled the Fuchow incident, noted in the embassy's quarterly report for the period ended December 31, 1919. Mutual regrets

were expressed and an agreement made for a small indemnity to the injured Chinese. The negotiations connected with the alleged firing by a Chinese gunboat at the Japanese garrison in Nikolaevsk last winter were concluded in December by the Chinese Government at the Japanese garrison in Nikolaevsk last winter were concluded in December by the Chinese Government agreeing to make an apology, to punish the officers and sailors responsible, and to pay compensation to the amount of approximately 30,000 yen to the families of the persons shot.

Relations with Russia.—The efforts of the Japanese Government to establish a buffer State in eastern Siberia received a check in consequence of the changes in the situation that took place in that country in early autumn. It had long been the desire of Japan to make the Vladivostok government, which originally had comparatively moderate leanings, the nucleus of such a buffer State, but this was given up because of the decidedly communistic complexion which it had come to assume. The Verkhne Udinsk government for its part had aspirations of becoming the center of the new State to be formed, but these it finally had to abandon owing to the fact that its fighting strength had become so weakened on account of the levies it was called upon to raise to assist the Moscow Soviet that it found itself unable to cope with Semionoff and the Chita group. The popular assembly of Chita, perceiving this situation and judging that with its moderate leanings it would be likely to receive the support of the Japanese Government, conceived the idea of making the center of a far eastern republic by combining with Semionoff. However, Semionoff was defeated by a combined attack from Verkhne Udinsk and Blagovestchensk, his forces were dispersed, and the Verkhne Udinsk reds entered Chita and assumed control of the government. By December the newly formed government at Chita had gained so much strength that the popular assembly at Vladivostok decided to amalgamate with the Chita government. The Chita government was then ready to make plans for the election of delegates to a constitutional convention to be held early in 1921.

According to the press, the question of what attitude the Japanese Government should assume toward the Chita government was the subject of considerable discussion in official circles, some arguing that the declaration of the Chita government that it stood for a democratic form of government and would respect private property should be taken at its face value and that recognition should be accorded to the government. Such a course, it was maintained, would afford Japan a convenient opportunity to withdraw its expeditionary force from the country, and thus not only would the nation be relieved of a heavy burden of expense but also the distrust which prevailed abroad regarding Japan's motives in Siberia would be dispelled. The mili-

tary group, however, pointed out that there was no assurance that the Chita government would live up to its declarations and that consequently Japan should, for the present, adopt a waiting policy until after the Chita government was established on a secure footing. The latter view finally prevailed, and consequently no steps have yet been taken except to despatch military and civil observers to Chita to report upon the progress of affairs there. The attitude of the Japanese Government toward the amalgamation of the Vladivostok government with Chita was shown in an announcement made by Gen. Oi, commander in chief of the Japanese expeditionary force, to the effect that there would be no objection, provided that it was understood that all agreements entered into by the Japanese authorities with the Vladivostok government would remain in force.

Relations with Great Britain.—The event of chief importance in Japan's relations with Great Britain was the difference of opinion that arose between the two Governments in the construction of the treaty stipulation relating to the terms and formulæ of the mandate over the former German islands lying south of the equator, which had been assigned to Japan by the supreme council of the League of Nations. Agreement could not be reached for a long time, but finally an interchange of views between Japanese and British representatives who attended the first session of the league assembly resulted in a composition of the differences. While agreeing to the terms of the mandate of the C class as proposed by the British Government, the Japanese Government came to an understanding with the British Government that Japan should make a declaration to the effect that the acquired rights of the Japanese in the former German islands south of the equator would have to be fully respected, and that its agreement to the terms of the mandate over these islands should not be taken to signify acquiescence on the part of Japan in any discriminatory or unfavorable treatment of her nationals residing there. Accordingly, when the terms of the class C mandates were decided upon in December at a meeting of the eleventh session of the league council the Japanese representative made a declaration on the lines of this understanding and reserved for Japan the right to resume negotiations with the British Government concerning the treatment of Japanese subjects in those territories.

Attitude toward the United States and Americans.—The California initiative, passed by a large majority in November, and the informal negotiations in Washington between Baron Shidehara, the Japanese ambassador, and Mr. Morris, which were instituted for the purpose of ascertaining the differences at issue between Japan and the United States and of suggesting remedies have served during the last few months as the chief inspiration to public discussion

of relations with the United States. Before the passage of the California initiative, which was aimed primarily at checking the expansion of Japanese agricultural enterprise in that State, the militaristic and anti-Government press taunted the Government with its supine attitude regarding the California question. On the other hand, the Foreign Office aided by a member of leading publicists and persons of authority made efforts to keep down popular excitement. The Government was worried over the situation and did its best to keep public discussion of the question on a sane basis partly no doubt for fear lest an outburst of hysteria would cause its downfall. The Government clutched at every opportunity to show that it was doing all possible in the circumstances: the talk of the constitution of a high commission, of sending Viscount Kaneko to America on a special mission and other remedial measures was largely inspired by the desire to show that it was "doing something." It is unlikely that it was expected that any permanent result could be achieved by these methods, but they were part of an attempt to calm the rising tide of rather uninformed public opinion and above all to "save Japan's face." The Japan-America Society, too, thinking that it was incumbent upon itself to take some action prevailed upon Mr. E. W. Frazer and Mr. J. R. Geary, both prominent American business men here and members of the executive committee of that society to proceed to America to make an effort to ameliorate the situation.

A statement made by the vice minister for foreign affairs on October 15 at a meeting of the Kenkyukai Party of the House of Peers throws light on the Government's attitude on this question. He explained that in spite of the efforts of the Japanese and American Governments the California initiative was sure to pass, and that although the Government was seriously considering what it would do afterwards, neither of the two courses which seemed open, namely, to appeal to the Supreme Court of the United States on the ground that the legislation was unconstitutional or to conclude a new agreement with the United States guaranteeing Japanese residents the possession of their vested rights, allowed room for optimism, since it was not certain that the decision of the Supreme Court would be favorable to Japan, while, even if the administration was in favor of concluding a new agreement, it was not certain that the Senate would agree.

The efforts of the civil government, particularly the foreign office, in the way of making the situation clear to the public contributed in no small measure to the sane and optimistic attitude with which the news of the passage of the initiative was received by the moderate and pro-Government press. For instance, the Chuo, an organ of the Seiyukai Party, minimized the losses that Japanese residents would

incur in consequence, poined out incidentally that Japanese could continue farming on a percentage basis, and alluded to the favorable prospects of a satisfactory solution through the conclusion of a new agreement. There was no doubt, however, that public opinion deeply resented the action of California and was inclined to attribute it to racial more than economic grounds. The sensational and anti-Government press, having already exhausted its stock of vituperation against the United States, devoted itself chiefly to urging the nation to assume a resolute attitude toward the question and taking the Japanese Government to task for not having made due efforts to advance toward "dispelling the misunderstandings of Californians." Marquis Okuma was quoted as saying in this connection that: "While there are some people who advocate war, such views are merely those of shallow-minded people. Americans are people who respect the voice of public opinion, and if we fight with fair and honorable arguments there are no Americans who will not yield to justice."

On the whole, judging from the tone of the press, there was far less excitement as a result of the passage of the initiative than might have been expected. The sensational and anti-Government press, however, dwelt strongly upon the fact that it constituted a blot on the history of the "Yamato race" and began to voice objections to the idea of concluding any agreement whereby Japan would yield further and bind herself to prohibit emigration to the United States on the ground that it would serve as an admission of racial inferiority which would establish a precedent for discriminatory treatment of Japanese in other countries. Although these utterances could be somewhat discounted, since they were inspired by a desire to discredit the Government's efforts to settle the question, the Jiji, a well-informed pro-Government paper, noted that in the draft of the proposed agreement on which Ambassador Shidehara and Mr. Morris were working there were many points to which the Japanese Government could not agree.

Later accounts of the negotiations at Washington gave a fresh impetus to the discussion of the California question, particularly in the anti-Government press, which became more insistent upon not yielding further in the matter of limiting immigration. At a meeting held at this time of the Japanese Emigration Society to consider the California question a resolution was passed to the effect that the initiative law was opposed to justice and humanity and therefore the society should make determined efforts for the fundamental solution of the problem. Plans were considered to give this resolution wide publicity and to hold mass meetings to arouse public interest. The point was made by Marquis Okuma, the president of the society, that if Japan bound herself to limit emigration to America, Japanese

would be driven away from America and other countries, and further that the issue involved the prestige of the empire.

On 1 December a meeting was held of the representatives of a dozen or more associations, including the Japan Peace Association, Japanese Emigration Society, Japan-America Relations Commission, and Association of the League of Nations, to consider American-Japanese relations. Addresses were made by Dr. Soyeda, Baron Sakatani, Viscount Shibusawa, and others. The following resolutions were passed:

1. The California land law is contrary to the universal principle of righteousness and humanity and will absolutely wreck the spirit of friendship between Japan and America.

2. We absolutely disapprove of the conclusion of any treaty which will abrogate the working of the gentlemen's agreement.

A committee was appointed to arrange for mass meetings of the members of these various associations in the near future. It does not appear, however, that any mass meeting of this nature was ever held, probably because popular interest in the question has somewhat died down.

II. ECONOMIC INFORMATION.

Actual economic conditions.—Although there was a slight improvement in the economic situation as compared with two previous quarters, it is generally believed that the depression will continue for some time to come. The share market has not recovered to any appreciable extent, while the prices of staple commodities, such as rice, bean cakes, and sugar, have steadily declined, with the result that warehouses have become filled to capacity with stocks of these goods. Imported goods have been left to rot and rust in customs compounds owing to the failure of consignees to take delivery of them. In view of the general stagnation, various undertakings have been started to relieve the raw silk, cotton yarns, iron, sugar, and other markets. Manufacturers have endeavored to clear markets of accumulated goods by curtailing operations. These efforts, however, have proved of little avail, since the purchasing power of the public has already been greatly reduced and since potential buyers, anticipating further declines in prices, were assuming a conservative attitude.

The curtailment of industrial operations naturally had an adverse effect on labor conditions. The working day was shortened and wages reduced by an average of 30 per cent. As there has been no corresponding drop in the cost of living, the reduction of wages has caused no little distress among the laboring classes. A conservative estimate places the number of workmen discharged during the first nine months of the year at nearly a million, but of these about

800,000 were reengaged, leaving a comparatively small number of workers out of employment. It was only during the last three months of the year that many factories shut down permanently, with the result that some 300,000 workmen were discharged during the period, of whom only about 170,000 have secured reemployment.

The Government's plan for bolstering up the price of silk had by the end of the year been pronounced a failure, and it came to be generally realized that the semiofficial buying pool, which is given sole authority to sell for export, would have to lower its standard prices or lose all support from the rank and file of silk traders. This pool purchased from Japanese reelers some raw silk at its standard price of 1,500 yen per bale, but was unable to continue buying because foreign silk dealers calmly refused to buy. Thus while the price has nominally been maintained, it has been at the cost of cessation of trading.

III. COMMERCIAL INFORMATION.

Development of foreign trade.—Japan's total foreign trade for the year 1920 was valued at $2,142,284,695, of which $1,168,087,390 was imports and $974,197,305 exports. Although exports showed a falling off as compared with the previous year, the increase in imports brought the total foreign trade to an amount that was slightly in excess of that of 1919. The excess of imports amounting to $193,890,085 is the largest unfavorable balance in the history of Japan's foreign trade. The excess of imports of gold and silver coin and bullion over exports amounted to $200,414,742, which means that during the year of depression Japan has been obliged to draw on her reserve credit abroad to the extent of nearly $400,000,000, less, however, invisible balances in the shape of freight earned by Japanese emigrants abroad. The total tonnage cleared from Japanese ports was 26,592,426, as compared with 23,120,301 in 1919. Of the total tonnage in 1920, 17,239,433 was Japanese vessels, 4,831,843 British vessels, and 3,114,739 American vessels. The tonnage of the American vessels was nearly three times as great as in 1919.

One of the most significant features in the export trade was the change in its distribution. Exports to the countries of southern Asia (Hongkong, French Indo-China, Dutch East Indies, Philippine Islands, Straits Settlements, Siam, and British India) increased from 13.7 per cent of the total to 23.2 per cent, to American countries, excluding the United States, from 2.3 per cent to 3.4 per cent, to African countries and Australasia from 3.4 per cent to 6.2 per cent, and to European countries from 9.3 to 10.1 per cent, while those to northeasern Asia (China, Kwangtung leased territory, and Russia in Asia) declined from 31.8 to 28.1 per cent, and to the United States from 39.5 to 29.6 per cent. The increase in the exports to the coun-

tries of southern Asia is accounted for largely by increased shipments of cotton tissues, knitted goods, paper, and Portland cement; to South American countries of silk and cotton tissues, knitted goods, silk handkerchiefs, buttons, potteries, and toys; to African countries of beans and peas, refined sugar, matches, knitted goods, potteries, and glass manufactures; to Australasia of lumber, plaits and braids, silk tissues, cotton tissues, knitted goods, buttons, paper, potteries, glass manufactures, machinery, lamps, and toys. The decrease in the exports to China was due to the boycott against Japanese goods and in those to Russia in Asia to the unsettled condition in that country. The decrease in the exports to the United States was accounted for largely by the curtailment of the demand for raw silk, consequent upon the hard times. Nevertheless, many articles of export to the United States registered advances, notably starches, canned comestibles, vegetable oils, cotton tissues, potteries, glass manufactures, brushes, lamps, and toys.

Increases were registered in the imports from all countries whose trade with Japan is important excepting China, French Indo-China, and Siam. In the case of China this was explained by the falling off of shipments of raw cotton; in the case of French Indo-China of rice. Imports from European countries increased as much as 88 per cent, indicating the beginning of a revival of commercial activities after the war. Imports from European countries were, nevertheless, barely one-third of the value of those from the United States. Most items in the imports from the United States, except chemical fertilizers, pulp, lead, construction materials, cotton tissues, paper, and automobiles, registered increases over the previous year.

As regards the future outlook of Japan's foreign trade, the view of Gov. Inouye, of the Bank of Japan, as contained in an address delivered recently at a meeting of Tokyo bankers, is worthy of notice. He said that Japan's export trade would for sometime to come be adversely affected by the unfavorable economic conditions prevailing in Europe and America as a result of the devastation wrought by the war and by the decline in China's purchasing power owing to the drop in the price of silver. He predicted that imports also would decrease, inasmuch as large stocks of such staples as cotton, wool, and other raw materials were accumulating in the domestic markets. Mr. Inouye explained that on account of the present cost of production in every branch of Japanese industry, which was higher than in any other country, it was not possible to compete in the markets of the world. He therefore suggested that it might become necessary to lower wages in order to bring about a reduction in the cost of production, and that such a course, although it would decrease the purchasing power of the middle classes, was an inevitable price to be paid for insuring the economic stability of the nation. He also emphasized

the importance of cooperation between traders, shipowners, bankers, and underwriters in order to hold the markets secured during the war.

IV. FINANCIAL INFORMATION.

(*a*) *Fluctuations of exchange.*—The fluctuations of exchange are shown in the following table, which gives the prevailing rate for demand notes on London and New York, respectively:

Date.	London.	New York.	Date.	London.	New York.
Oct. 1, 1920	2. 10 3/16	50 5/8	Dec. 15, 1920	2. 10 1/16	49 5/8
Nov. 3, 1920	2. 10 3/16	50 1/2	Dec. 17, 1920	2. 10 1/16	49 3/8
Nov. 9, 1920	2. 10 7/16	50 3/4	Dec. 20, 1920	2. 9 1/16	49
Nov. 10, 1920	2. 10 7/16	50 3/8	Dec. 22, 1920	2. 8 13/16	48 1/2
Nov. 18, 1920	2. 10 7/16	50 1/4	Dec. 24, 1920	2. 8 7/16	48 1/2
Dec. 8, 1920	2. 10 7/16	50 1/8	Dec. 29, 1920	2. 8 7/16	48 1/4
Dec. 11, 1920	2. 10 7/16	49 7/8	Dec. 31, 1920	2. 8 7/16	48 1/4

(*b*) *Loans, foreign and domestic.*—There were no foreign loans during the period under review, except the sterling loan of the South Manchurian Railway Co., amounting in Japanese currency to 117,156,000 yen.

The following domestic loans were floated:

	Yen.
In October:	
5 per cent domestic loan	2, 478, 700
5 per cent exchequer bonds	60, 375
In November:	
5 per cent exchequer bonds	106, 090, 300
Extraordinary exchequer bonds	53, 000, 000
In December:	
5 per cent domestic loan	609, 050
5 per cent exchequer bonds	49, 196, 025

(*c*) *Financial conditions in general.*—The amount of deposits and advances of the Japanese banks reflect the state of the money market as well as the general economic and financial condition. The accounts of deposits, advances, cash holdings, and securities of the banks throughout the country for the last three months of 1920, as shown by the returns furnished by the Tokyo bankers' clearing house, are made up as follows (in thousand yen):

	Deposits.	Advances.	Securities.	Cash holdings.
October	4, 576, 901	4, 576, 899	1, 193, 940	509, 750
November	4, 694, 083	4, 621, 410	1, 251, 596	358, 452
December	4, 811, 190	4, 618, 038	1, 261, 146	509, 750

Owing probably to the fact that the financial embarrassments following the panic of last spring had become somewhat lightened by

early autumn and that consequently it became easier to recover the funds advanced at that time, advances were found to be 24,000,000 yen less than deposits at the end of September. At the end of the following month deposits and advances were nearly at a level, but the excess of deposits over advances gradually increased until it had reached 193,000,000 yen by the end of the year. The tone of the money market, as these figures suggest, had become distinctly slack; discount rates, which had long remained firm in spite of the long-continued slackness of call money, began to show a weakening tendency, and it was even rumored that the Bank of Japan would reduce its interest rate. This slackness of the money market, however, abnormal in character, being nothing but the result of the fact that while the demand for funds was at a low level from the effects of the financial depression, the banks were doing their utmost to replete their specie holdings. While the aggregate of all kinds of deposits showed a gradual decline from the end of March to the end of August on account of the panic, special current accounts took an opposite course. The steady increase shown in the totals of special current accounts and also in postal savings amidst the general depression of the money market clearly indicates that the middle or lower classes were not so seriously affected by the slump as has generally been imagined.

Whereas foreign trade, industry, and the stock markets suffered seriously from the panic, the money market was comparatively calm during the general convulsion. The country's specie reserve at home and abroad, which is held by the Government and the Bank of Japan, continued to pursue an upward course and at the end of the year reached the huge sum of 2,183,000,000 yen, the highest figure yet recorded. The amount of deposits was only 164,000,000 yen below the figure for the end of the preceding year, while the total advances were 101,000,000 yen in excess of the corresponding figure for 1919. Securities also increased steadily during the year, due not only to the fact that money became gradually easier, but also because banks desiring to exercise caution in making advances preferred to seek investment in public loans and debentures. Cash holdings of banks, however, were 64,000,000 yen less than at the end of 1919.

JAPANESE MIGRATING FROM CALIFORNIA TO BRAZIL.

Source: Reliable.

(3202.)

21 April, 1921.

An American, a personal friend of the intelligence officer, to-day informed the intelligence officer that he has been approached by two Japanese in San Francisco, the latter requesting him to arrange for

the transportation of 5,000 Japanese from various places in California, such as Stockton, San Bernardino, Los Angeles, and the Sacramento River Valley, all to leave from the port of San Francisco for a port in Brazil, probably Rio de Janeiro.

The arrangements are that this gentleman is to receive $70 per head, $35 of which will go to the Japanese who is negotiating with this gentleman for the 5,000 Japanese.

It is believed that this exodus is the result of nervousness and uneasiness on the part of the Japanese caused indirectly from the recent order from the Japanese Government directing certain Japanese of draft age to return to Japan.

The reason for the immigration to Brazil is due to the Brazilian immigration laws, which grant to all immigrants 250 acres of land, will be the material and assistance for building a house and free transportation from the seaport to Brazil to the land grant. The payment for this land and material is to be made as follows: One hundred dollars after the first successful crop and the balance within 20 years from the date of settlement on the land. The immigration laws further state that if at the end of 2 years an immigrant is not satisfied he will be given free transportation from Brazil to his own country and will be released from his contract. The above information is believed to be, in general, correct.

The informant states that at the present time in all contracts between Americans and Japanese the Japanese insist upon the following clause being inserted: "All contracts are abrogated in case of the severance of diplomatic relations between the United States and Japan." In view of this, the gentleman in question hesitates to engage American steamers to transport these Japanese and is at present negotiating with the Brazilian ambassador at Washington in the endeavor to obtain two Brazilian steamers to take these Japanese from San Francisco to Brazil. The Brazilian ambassador is encouraging this move and arrangements are progressing satisfactorily.

JAPAN—ORGANIZATION OF OIL COMPANIES TO PROVIDE OIL FOR EIGHT AND EIGHT SQUADRON.

Source: Reliable.

(3958–C.)

30 March, 1921.

The problem of supplying crude oil for the eight and eight squadron proposed to be built in the course of the next few years is being considered by the naval authorities, who are advocating the development of the oil industry in Japan proper and her colonies. Oil men hope this will not be carried out to any great extent, as it is thought it would interfere with petroleum interests.

In the event of the 8-8 squadron being constructed something like 300,000 tons of crude oil will be required annually in times of peace, jumping to 3,000,000 tons yearly in case of war.

Schemes are now under way for the management of oil companies to supply crude oil to the navy. The proposed establishment of the Shinyu Co. by Mr. Maruse, of Tokyo is on way to fruition. The company will be capitalized at ¥1,500,000, and will take over contracts which the Rising Sun Oil Co. holds, signed by the Japanese Navy, in which the latter agrees to supply 50,000 tons of oil annually. The Asahi Co. will be established, with a capital of ¥750,000 and will use the factories of the Rising Sun Co., in Kyushu, from which they will turn out 30,000 tons of crude oil yearly.

The Teikoku Oil Co. will call up the payment of unpaid capital shortly and will import from abroad about 50,000 tons of crude oil and kerosene oil through Messrs. Suzuki & Co. It is the general opinion among oil men that petroleum will be imported briskly from this time on.

JAPANESE PROPAGANDA.

Source: Reliable (Japanese press).

(11515–A.)

16 April, 1921.

The Japanese-Mexican activities referred to in the above letter have come to light for the first time in the following article published April 16, 1921:

Mexico is a country which is worthy of the greatest notice on the part of Japan. In the first place, its area is large, being five times as wide as this country. Secondly, the climate of Mexico is healthy. Thirdly, there are abundant supplies. Americans have already invested capital in Mexico to the tune of $2,100,000,000; Britons have invested $800,000,000; Frenchmen, $600,000,000; and Spaniards $200,000,000. There are also considerable investments from Germany, Belgium, and Italy. The people of these countries go to Mexico even when they are disliked.

On the other hand, Japanese are warmly welcomed by Mexicans, but few of them go to Mexico. The only country in the whole world which now welcomes the Japanese is Mexico, but somehow the Japanese Government is checking Japanese emigration to that country. Many Mexicans believe that they are descendants of Japanese, and many Mexican girls are glad to marry Japanese. If Japanese capitalists elect to invest capital in Mexico and open up her resources she will readily welcome it. We hope that both the officials and the people will cooperate to promote Japanese-Mexican friendship and go ahead with the object of opening up the natural wealth of Mexico with Japanese capital.

In this connection many Japanese are apprehensive of the feelings of America. Those who are eager to please her fear lest the undertakings of the enterprises in Mexico by Japanese capitalists should wound the feelings of Americans. But this is unnecessary reserve. Do Americans not come to the far eastern countries in large numbers? They have their own spacious territory,

yet they extend their hands even to the Far East, steadily invading China, Korea, Manchuria, and Siberia. The territory of this country is too narrow for its overflowing population, and if a few Japanese go to America an attempt is immediately made to exclude them. It is outrageous for America, while assuming such an attitude in her own territory, to interfere with the coming of Japanese to Mexico. If any protest is received from America, Japan may then protest against the coming of Americans to China, Korea, Manchuria, and Siberia.

Even as a means of restraining the arrogance of America in the Far East, it is necessary that Japan should set about opening up the resources of Mexico. We can not but hope that the authorities, together with private business men interested, will speedily decide upon a policy toward Mexico.

PURCHASE OF MILITARY SUPPLIES BY JAPAN.

Source: Reliable.

(7010–E.)

21 April, 1921.

The Japanese Government has just completed purchase in England of 400 Vickers maxims and 200 Lewis guns, with spare parts, to be shipped to Japan, sufficient to make nearly double this number completed guns.

UNITED STATES-JAPANESE RELATIONS.

Source: Reliable.

(11345–O.)

6 April, 1921.

The Japanese have active agents in Paris, and I hope to learn something definite about their operations in America as well as in Europe.

They are keeping a factory in Switzerland running at top speed for the production of Deisel engines, and to a certain extent Switzerland is now a German Province for the production of material which Germany alone knows how to make or can best make and which is being supplied to the Japanese. They are buying everything they can lay their hands on in the way of submarine equipment, and it is alleged that they are buying large quantities of gasoline in Europe. With regard to the latter, I wonder if it is true, because it seems to me that they can buy in the United States, in the open market, plenty of gasoline and much cheaper than over here.

The following is a report of a conversation with M. Painleve.

M. Painleve has been several times in the French cabinet and was prime minister in 1917. He recently made a trip to Japan, China, and French Asiatic possessions. He is an extremely intelligent and active man.

I had a conversation with him to-day, and gradually led the talk from China to Korea and Japan and the latter's present activity in

the matter of armament. The following is a résumé of the ideas expressed by M. Painleve:

The Japanese are not only the Germans of the East, but the super-Prussians of the Orient. They are even more difficult to understand than the Chinese, not only because they are more deceitful but because they have European concessions, half digested and bady mixed with their native instinct and methods of thought. Their ambition is to dominate and make use of China, without speaking of their designs upon Manchuria and eventually Mangolia.

In imitation of the Germans they have set before themselves a vast plan which will make them masters of all eastern Asia. They expect to create a monopoly to commerce with China and gradually to organize the Chinese military strength, for defense or offense in their own interest.

They are very severe masters in Korea, where they exploit the country to their own advantages. They have no thought of helping the natives in the sense that you Americans help the Filipinos. They seek to improve the productivity of Korea and the Koreans, solely for their own advantage.

I think that their military preparations are based upon a fear of America; not a fear that America will attack them but a fear that America will seek to prevent the accomplishment of their designs upon China. They do not anticipate that you will attack them, but they do fear your obstruction to their plans. Therefore they are preparing themselves militarily, with the idea that they would be so strong as to make you hesitate, possibly strong enough to actually prevent in case of war your coming effectively to the rescue of China or being able to successfully invade any Japanese territory.

Their activity in constructing submarines and seeking submarine material points to this. In order to attack Japan America would have to cross the seas and their *submarines would be a powerful weapon against the American fleet or American transports.* If in sufficient number and power, they could cut off commerce.

From my numerous conversations with Japanese statesmen and other prominent men, I do not think that Japan thinks that she can successfully attack America. They think they could have done it 10 years ago, but they realize that the time has now passed when they could make a descent upon your Pacific coast. They do not believe that you are getting ready to make war on them, but they are afraid of you, afraid of your upsetting their plans in China.

There is a very powerful socialist party in Japan, just as there was in Germany before the war. This party is opposed to the imperialistic plans of the governing and military classes. This had disadvantages as well as advantages, for, when confronted with an internal political danger the governing class frequently seeks relief in external war. Some incident might arise which would inflame the jingo spirit and force the Government, even against its best judgment, into a hostile attitude toward the United States, or actual conflict.

JAPAN—SOCIAL CONDITIONS.

Source: Reliable.

(11556–C.)

30 March, 1921.

In view of the fact that the population of this country is yearly increasing by hundreds of thousands, some urge emigration, and in some cases they even go to the length of urging the necessity of terri-

torial expansion. It goes without saying that the plea of territorial expansion is out of the question. As to the question of emigration, we indorse the statement of Mr. Hara in the House of Peers. He said that the population of the country is not yet too large and that there is room for a further increase both at home and in the colonies. The premier added that when industrial prosperity returned there would be an increased demand for labor, and moreover the question of population could be met by the Government plans for the cultivation of unploughed land.

Years ago the late Marquis Komura urged in the Diet a principle of nonseparation for the Yamato race. This plea was misrepresented to be one for the concentration of emigrants in Manchuria and Korea, and as at that time arrangements were being made for a gentleman's agreement it was regarded as nonencouragement of emigration. The strongest reason then advanced against emigration to Korea and Manchuria was that wages there were low. The only place where wages are sufficiently high is North America, but Japanese emigration is not permitted, and as a result emigration to South America, especially to Brazil, was encouraged. As a matter of fact, about 20,000 Japanese have so far gone there. At present wages in Brazil are quite low, the net income of the immigrants working out at only ¥1.30 a day; that is, they are lower than even in Korea and Manchuria. Moreover, considerable traveling expenses are needed. Why should Japanese emigrate to those places? The situation would be otherwise if the country were so densely populated as to leave no breathing space, but the population is rather thin in Hokkaido and in the northeastern part of the main island.

Mr. Hara was quite right when he said that further room for an increase in population could be found in the country and in its colonies. Emigration agents may speak of the encouragement of emigration, but the Government policy should be not to think of emigration except in regard to the supply of labor for Japanese enterprises abroad. The theme of the encouragement of emigration based on the stereotyped plea of a surplus population should be demonstrated to be devoid of foundation.

THE BATTLE OF HELGOLAND BIGHT, AUGUST 28, 1914.

By Harry E. Yarnell, Captain, U. S. Navy.

LECTURE DELIVERED TO DESTROYER STAFF COLLEGE, ATLANTIC FLEET AT CHARLESTON, S. C.

7 January, 1921.

THE BATTLE OF HELGOLAND BIGHT.

This naval action, the first of any importance in the Great War was fought on 28th of August, 1914. The scene of the action was

the area just west of Helgoland and north of the fringe of islands along the German coast.

FORCES ENGAGED.

The British had the following force in action:

BATTLE CRUISERS (ADMIRAL BEATTY IN COMMAND):

Lion.	**Invincible.**
Queen Mary.	**New Zealand.**
Princess Royal.	

FIRST LIGHT CRUISER SQUADRON (COMMODORE GOODENOUGH IN COMMAND):

DIVISION 2.	DIVISION 1.	DIVISION 3.
Nottingham.	**Southampton.**	**Falmouth.**
Lowestoft.	**Birmingham.**	**Liverpool.**

Third Destroyer Flotilla (Commodore Tyrwhitt in command "Aresthusa" (light cruiser), Flotilla Leader):

DIVISION 4.	DIVISION 3.	DIVISION 2.	DIVISION 1.
Laurel.	**Laforey.**	**Lark.**	**Lookout.**
Liberty.	**Lawford.**	**Linnet.**	**Leonidas.**
Lysander.	**Louis.**	**Lance.**	**Legion.**
Laertes.	**Lydiad.**	**Landrail.**	**Lennox.**

First Destroyer Flotilla (Capt. Blunt in command "Fearless" (light cruiser), Flotilla Leader):

DIVISION 5.	DIVISION 3.	DIVISION 2.	DIVISION 1.
Goohawk.	**Ferrett.**	**Ariel.**	**Acheron.**
Lizard.	**Forester.**	**Lucifer.**	**Attack.**
Lapwing.	**Druid.**	**Llewellyn.**	**Huid.**
Phoenix.	**Defender.**		**Archer.**

The fourth division of this flotilla (*Badger*, *Beaver*, *Jackal*, and *Sandfly*) had been detached to accompany the Humber battle cruisers (*Invincible* and *New Zealand*).

SUBMARINE FLOTILLA (COMMODORE R. J. B. KEYES IN COMMAND):

Lurcher (flag), Firedrake, destroyers.
Eight submarines of the E class.

The *Germans* had the following forces engaged:

LIGHT CRUISERS—

Frauenlob.	**Koln (flagship of Rear Admiral Maass).**
Stettin.	**Ariandne (Capt. Subohn).**
Stralsund (Capt. Harder).	**Strassburg (Capt. Retzmann).**
Mainz (Capt. Pasche).	**Duntzig (Capt. Reiss).**

DESTROYER FLOTILLAS I AND V.

This account of the battle is based on the British official history of the war which was written before reliable German information of the ships operating in that area was available.

PLAN OF BATTLE.

The first proposal to carry the war into enemy waters came from Commodore Keyes, who was in command of the Eighth or "Oversea" Submarine Flotilla. This flotilla was based at Harwich and was composed of submarines of the D and E classes. The mission of this submarine flotilla was to keep a constant watch off the ports in the Bight.

Here we have the example of submarines performing scouting service immediately upon the outbreak of war, and this was necessarily so, as it was obvious that surface craft could not maintain a continuous watch in the restricted waters of the Bight in close proximity to enemy bases.

Not only were the submarines performing scouting duty but they acted offensively against enemy surface craft in this area, and on one occasion attacked a large cruiser of the "Roon" class and only by unusually bad luck missed sinking her.

As a result of the observations of the British submarines it was discovered that the German procedure was to send out to certain points a number of destroyers escorted by light cruisers. Upon reaching these points the destroyers fanned out to seaward.

On their return at daylight they were usually met about 8 a. m. by the light cruisers about 20 miles northwest of Helgoland.

During daylight a continuous guard was kept up, both north and south of Helgoland, by a large number of destroyers steaming at high speed on some regular system which was evidently designed to prevent mine laying and to foil submarine attacks.

Admiral Scheer, in his book, "Germany's High Sea Fleet in the World War," states with regard to the protective scouting in the bight at the opening of the war:

> The establishment of a protective system was entrusted to the commander of the scouting forces, Vice Admiral Hipper, and all the destroyer flotillas, U-boats, mine-sweeping divisions, airplanes, and airships were placed under his orders. From these forces a protective zone was formed which by day consisted of several circles at varying distances from the lightship *Elbe I.*
>
> The outermost line, 35 nautical miles, was held by destroyers. Six miles behind there were submarines, and a further 6 miles back the inmost line was patrolled by mine-sweeping divisions. Two to four light cruisers were distributed behind the two wings of this protective zone, east and south of Helgoland. At night the U-boats and the destroyers on the outermost line were withdrawn, and only the minor one was held.

This arrangement went into effect at the beginning of hostilities, but was later extended, but Admiral Scheer does not go into details as to the extension.

Commodore Keyes' Plan.

As a result of the observations of his submarines Commodore Keyes was of the opinion that a well-organized drive commencing inshore near Helgoland before dawn and sweeping to the westward would inflict considerable damage on enemy patrol, and he proposed that an expedition for this purpose should be organized.

The Admiralty, however, after consultation with Commodore Tyrwhitt, modified Keyes' plan as follows:

Instead of the destroyer sweep commencing from inshore before dawn so as to inflict loss on the returning night patrols, the actual drive was not to commence until 8 a. m., when the night patrols would have been safely in port. The expedition was that our flotillas would thus intercept the enemy destroyer day patrols, who were to be lured out to sea by an outer line of submarines. Otherwise the scheme was on the general lines suggested by Commodore Keyes. An inner line of three submarines (*E–4*, *E–5*, *E–9*) was to be first formed north and south of Helgoland, and till a certain moment they were to remain concealed so as to be in a position to attack any cruisers that migh come out to drive off our destroyers, and also any they might catch of those returning. An outer line of three others (*E–6*, *E–7*, *E–8*) would be placed some 40 miles out, and their function would be to show themselves and try to draw the enemy destroyers to sea. Two others were to take station off the Ems to deal with anything that might come out or try to get in. The attacking force was the first and third flotillas and their leaders, *Arethus* and *Fearless*.. The *Invincible* and *New Zealand*, which had just taken up their station in the Humber, were to act as supports, while Admiral Christian, with Admiral Campbell's squadron, was to be in reserve off Terschelling. This reserve force consisted of the *Euryalus* (flag of Rear Admiral Christian), *Amethyst* (light curiser) and Cruiser Force C, *Bacchante* (flag of Rear Admiral Campbell), *Cressy*, *Hogue*, and *Aboukir*.

The plan of operations was that while the submarines were getting into position the battle cruisers and destroyer flotillas would get into touch to the southeast of the Dogger Bank, and during the night proceed to the northeastward so that at 4 the next morning, the destroyers would be 25 miles southwest of the Horn Reef Light Vessel, and the battle cruisers further to the westward. The destroyers were then to commence the actual raid by running down to the southward with the battle cruisers on their starboard quarter till they had reached a point 12 miles to the westward of Helgoland at 8 a. m. when they were to begin the drive to the westward. (See Corbett Official History of the War, vol. 1, p. 103.)

About this time, however, the Ostend expedition was approved in London, and it was desired to carry out the above plan as a covering attack. The commander in chief of the Grand Fleet was notified that the Ostend expedition might lead to a movement of the High Sea Fleet, and he proposed moving down with the whole Grand Fleet as a support to the proposed Bight attack. He was informed—by the Admiralty, presumably—that the battleships would not be required,

but that his battle cruisers might support if convenient. Accordingly he sent Admiral Beatty with three battle cruisers (*Lion*, *Queen Mary*, *Princess Royal*) and Commodore Goodenough's light cruiser to meet the Humber battle cruisers the next morning at their rendezvous. He also asked that Admiral Beatty should be given instructions as to what the light cruisers were to do, and received a reply that they were to make for the destroyer rendezvous and to follow their sweep in support. The Admiralty sent this information to Admiral Christian and the two commodores (Tyrwhitt and Keyes), but by some mischance it never reached either commodore, and they began the elaborate movement with no knowledge that the Grand Fleet cruisers were taking part in it. Consequently, when at 3.30 a. m. the light cruisers were sighted by the flotillas they narrowly escaped being attacked.

Their identity, however, was quickly discovered, the junction was effected as arranged, and Commodore Tyrwhitt began his run to the southward on time according to program, with the light cruisers following in support and the five battle cruisers some 30 miles distant on his starboard quarter.

Commodore Keyes and his submarines, however, did not learn of the presence of the additional battle cruisers and light cruisers until during the action the next day, and as will be seen, this lack of information added to the confusion that existed in a very confused action.

Corbett, in his description of this battle, states that the Germans had got wind of the intended operation, and had laid their plans accordingly. This, however, seems rather improbable, judging from the disposition of the German vessels. Admiral Scheer in his volume makes no statement that counterpreparations to meet the attack were undertaken, and the quotations he gives from the reports of survivors rather indicate that the arrival of the British forces was entirely unexpected.

Plate 1 gives the approach formation of the British light cruisers and destroyer flotillas. Commodore Tyrwhitt led in the *Arethusa* and the third flotilla in cruising order—that is, in divisions line ahead, disposed abeam to port, the columns being 1,000 yards apart.

Two miles astern of him was Capt. Blunt in the *Fearless*, leading the first flotilla similarly disposed.

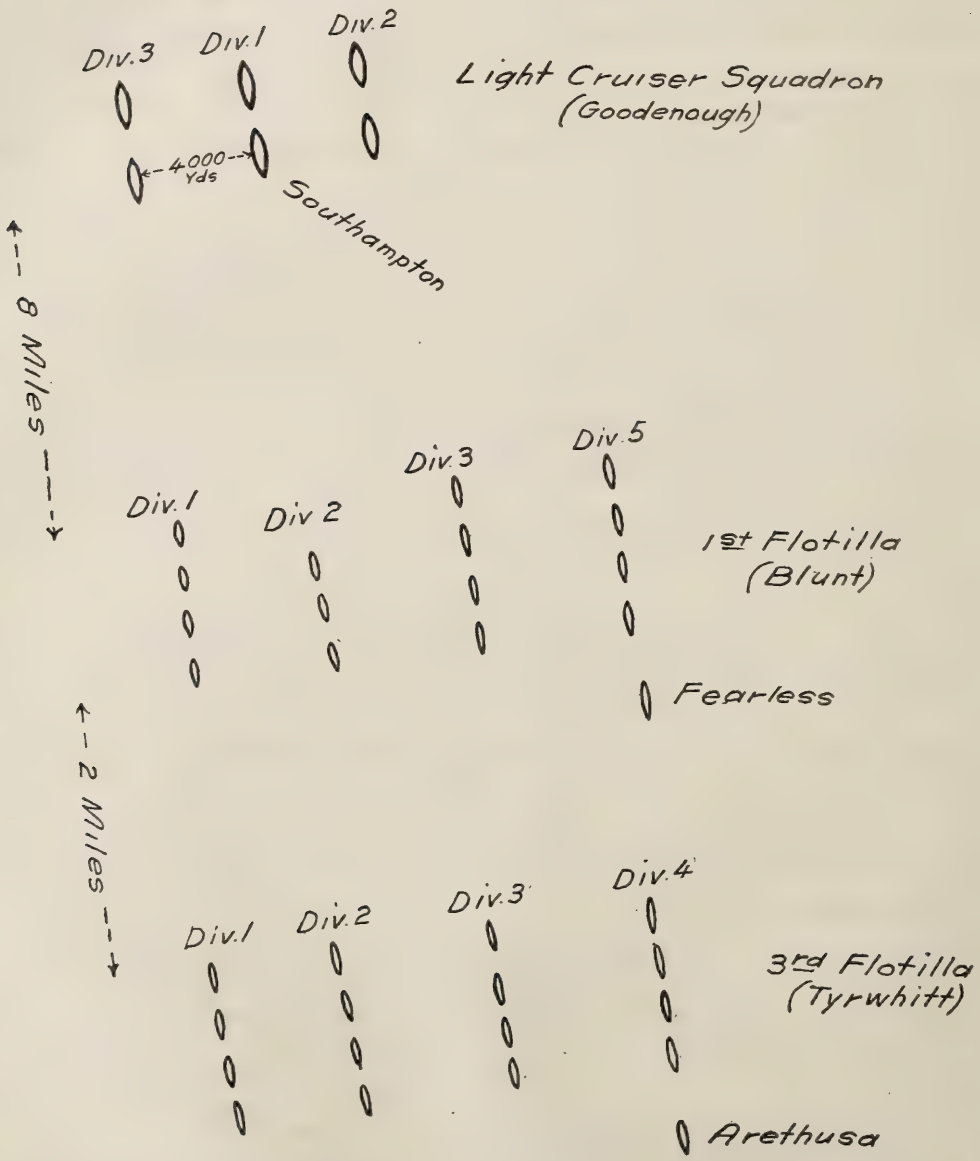
Following them at an interval of 8 miles was Commodore Goodenough in the *Southampton*, with his six light cruisers in three divisions 4,000 yards apart.

First Phase of the Battle.

Plate 2 shows the positions of the opposing forces at 7 a. m. About this time a German destroyer was sighted on the port bow

by Tyrwhitt, and he ordered the fourth division of his flotilla to chase, without altering course himself.

SKETCH NO. 1
Approach Formation of Light Cruisers and Destroyers.
Heligoland Bight

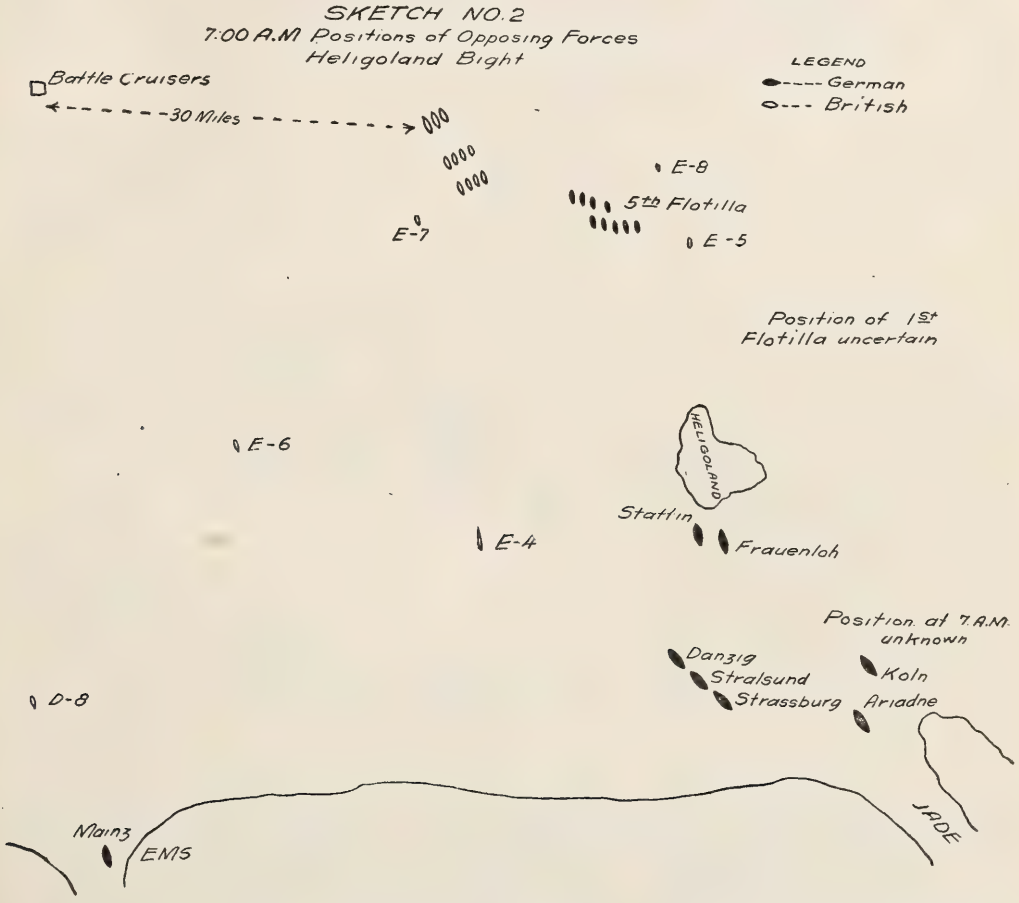


The weather at the time was good, with smooth sea, and fair visibility to seaward, but farther in the Bight fairly thick weather prevailed. Admiral Scheer states that the visibility in the neighborhood of Helgoland was only 3 or 4 miles, and that the upper part of the island was completely shrouded in mist.

The German destroyer made off to the southeast and soon afterward a number of the other enemy destroyers were sighted—the fifth flotilla. Fire was opened on both sides but at too great a range to be effective.

After half an hour Tyrwhitt decided to go to the assistance of his fourth division and changed course six points to the southeastward with his flotilla, followed by the *Fearless* and the first flotilla.

The light cruiser squadron continued on its original course and on account of the distance astern and poor visibility had probably lost touch with the flotillas. Hence when the *Arethusa* later became



engaged with two enemy light cruisers, the support was absent. It would seem that an error was made in not concentrating the light cruiser squadron with the destroyers in the approach formation.

In the chase to the southeastward, enemy destroyers were made out on both bows of the *Arethusa*, and first one and then another group was chased, but without gaining.

About 8 a. m. the *Stettin* was sighted coming up from the north of Helgoland.

Tyrwhitt altered course to the eastward to meet her and soon sighted another cruiser, the *Frauenlob*. Soon he was under a heavy

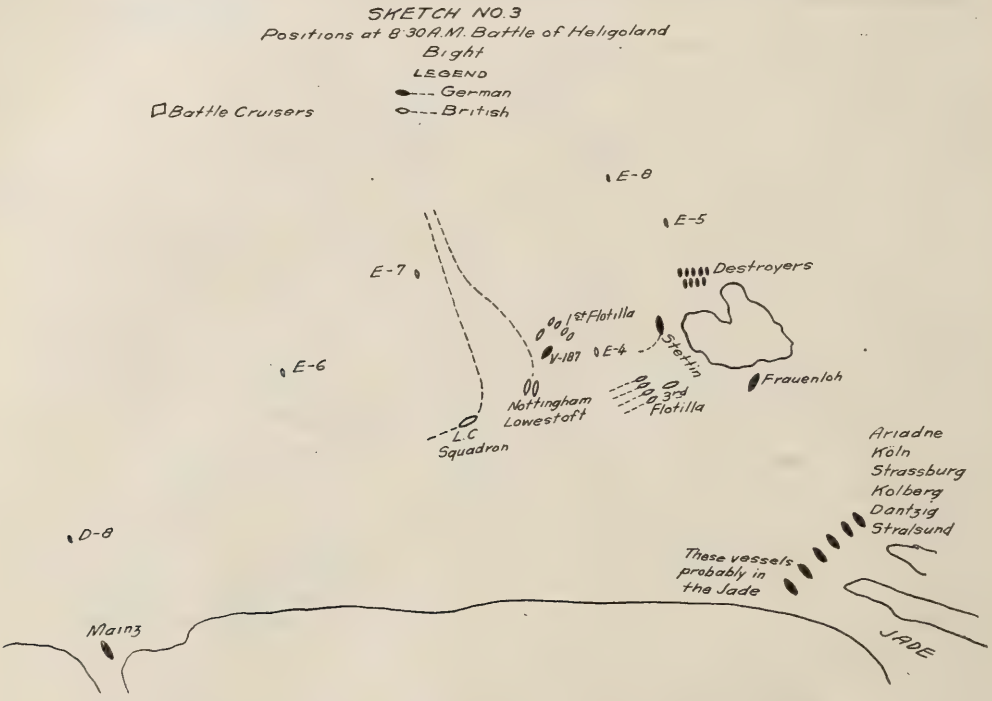
fire from both of them. His flotilla gave him all the support they could both with guns and torpedo, but he soon began to suffer.

At 8.05 the *Fearless* came in sight and the *Stettin* turned back toward Helgoland with the *Fearless* and her flotilla in chase.

The *Frauenlob* turned to the southward pursued by the *Arethusa* and the chase continued until Helgoland loomed up out of the mist to port.

Tyrwhitt then made the signal "W 1/4 s. (mag.)," which was for the drive to the westward to begin.

The *Fearless* and her flotilla at once called off the pursuit of the *Stettin*. The *Arethusa* continued the action with the *Frauenlob* until 8.25 when a well-placed shell, from the only gun left in action, a 6-



inch, landed under the *Frauenlob's* fore bridge and she steered off and made for Helgoland. Tyrwhitt then repeated his signal and started to the westward. This ended the first phase of the action, with the damage on both sides about even. A small torpedo boat was smashed up by the British destroyers but was able to make port with the assistance of two German destroyers.

The Second Phase.

Plate 3 shows the approximate position of the opposing forces at 8.30 a. m., just after the *Arethusa* had turned to the westward.

Just after turning to the westward Capt. Blunt, in the *Fearless*, sighted a German destroyer to the westward which proved to be *V–187*, the leader of Flotilla V. The *Fearless* opened fire and *V–187* ran to the southward and sighted the *Nottingham* and *Lowestoft* which had been detached from the light-cruiser squadron to assist in

the action with the *Stettin* and *Frauenlob*. The *V–187* then turned to the northward but was soon engaged with the third and fifth divisions of the first flotilla. She was soon disabled, and Capt. Blunt pushed on to the southward to join Tyrwhitt, leaving the third and fifth divisions to finish the *V–187*. She sank at 9.10 and boats were sent to pick up the survivors. About this time the *Stettin* appeared on the scene from the westward and opened fire on the British destroyers. The latter succeeded in getting their men on board and abandoned the boats. There was one exception, the *Defender*, which had drifted away from her boats and was compelled to abandon them. Their crews would have been lost had it not been for submarine *E–4*, which was watching the action through his periscope. When the *Stettin* appeared he fired a torpedo but the *Stettin* apparently saw the wake and headed directly for *E–4*, forcing her to dive. At 9.30 he came to the surface and, finding the cruiser gone and the boats still drifting about, took on board the *Defender's* men and three prisoners "as a sample," leaving the rest to look after the wounded.

Movements of Light-Cruiser Squadron.

At 8.30 a. m. Commodore Goodenough had reached his final position west-southwest of Helgoland. At 8.10 he had detached the *Nottingham* and *Lowestoft* to the assistance of the *Arethusa*. These two cruisers chased a destroyer to the eastward, but soon lost her in the mist. Later on, as they ran down abreast of Helgoland, they saw more destroyers to the southwest and gave chase in that direction. They lost them at 9.10 and turned to northward and set course for the battle cruiser rendezvous on a westerly course and signaled this fact to the three commodores; the *Nottingham* and *Lowestoft* did not get the signal and were out of the action for the rest of the day.

About 8.15 Commodore Keyes, in the *Lurcher*, sighted the *Nottingham* and *Lowestoft* and promptly radioed to the *Invincible* that he was in touch with two enemy cruisers. As has been stated, Keyes and his submarines were not aware that the British light cruisers or three extra battle cruisers were taking part in the engagement.

Commodore Goodenough took in the *Lurcher's* message at 8.15 and decided to go to her assistance. After several changes of course he finally ran across her about 9 a. m. This only added to the confusion, for the *Lurcher* sent word to the *Invincible* that she was in the presence of four enemy cruisers instead of two and stood away for the battle cruiser rendezvous. The four light cruisers followed for a short time, but soon changed course to the westward and at 9.30 came in contact with one of Keyes' submarines (*E–6*) and promptly attempted to ram her. The submarine only escaped by a quick dive under the flagship.

The *Arethusa* and third flotilla also turned back from their westward course at 9.45 upon receiving word of the *Lurcher's* contact with enemy cruisers. The *Stettin* was run across again, but sheered off into the mist.

At 10 the *Arethusa* turned back to the westward, and as the ship was in need of repairs, sent her own flotilla on to the westward and held the *Fearless* and first flotilla with her.

About 10 the *Lurcher* and the light cruisers were in clearer weather and Keyes ventured to make the challenge which cleared up the mystery. There was no method of notifying the submarines, however, and Commodore Goodenough radioed to Beatty that he considered it best to retire out of the danger area.

Engagement with the "Stralsund" and "Stettin."

Sketch No. 4 shows the approximate positions of the opposing forces at 10.30 a. m. By that time the *Arethusa* had succeeded in getting all of her guns except two 4-inch in commission, but her speed had been reduced to 10 knots.

At 10.55 the *Stralsund* came up from the southeast and opened a heavy fire on the *Arethusa*, but the *Fearless* and first flotilla delivered a torpedo attack and the *Stralsund* sheered off to the northward.

Soon afterwards the *Stettin* showed up from the eastward and began a hot action with the *Arethusa* and *Fearless*.

About the same time the first flotilla, somewhat to the westward, sighted the *Mainz* standing to the northward. They chased her for about 20 minutes, when the *Mainz* suddenly turned back 16 points, having encountered the light-cruiser squadron, which was standing back to the assistance of the *Arethusa*.

The *Arethusa* had sent out three urgent calls for assistance, and Admiral Beatty about this time decided to take his squadron to the eastward in spite of the submarine menace which undoubtedly existed.

As the *Mainz* ran to the southward from the light cruisers she opened fire on the *Arethusa*, and the latter, not knowing that cruisers were coming, ordered the five divisions of destroyers that were present to attack her. The *Mainz* concentrated her fire on the leading division and with four salvos placed three of the four destroyers out of action.

By this time the *Mainz* was under the fire of the light cruisers, and was on fire fore and aft.

About this time the *Koln* and *Ariadne* appeared on the scene, but the timely arrival of Commodore Goodenough had saved the *Arethusa*. Very soon afterward the battle cruisers appeared, and in a short engagement sank the *Koln* and *Ariadne*. The *Stettin* and *Stralsund* escaped in the mist.

At 1.10, half an hour after the first shot was fired, Admiral Beatty made the signal to retire.

The *Koln* was lost with all hands, including the flotilla admiral (Maass).

A number of survivors were taken off the *Mainz* by the *Lurcher*, which placed herself alongside the sinking ship in order to take them on board, and narrowly escaped being smashed by the propellers as the *Mainz* rolled over and sank. This vessel had been hit by a torpedo during the destroyer attack. The survivors of the *Ariadne* were picked up by the *Dantzig* and *Stralsund*.

The total German losses were about 1,000 in killed, wounded, and prisoners.

The British loss was 35 killed and 40 wounded.

The *Arethusa*, which was punished the most severely of the British vessels, lost 11 killed and 17 wounded. This light punishment was ascribed to her armor.

COMMENTS ON THE BATTLE.

While this operation was only a reconnaissance in force, it has a number of features which are interesting and instructive.

The surprising feature on the German side is that, although the attack began about 7 a. m. and continued for nearly five hours, no major vessels were sent to the assistance of the light cruisers and other craft.

Von Tirpitz, in his Memoirs, comments on the battle as follows:

Contrary to the expectations of many officers, Von Ingernhol, who was in command of the fleet, was brought to take a strongly defensive view of the operation order so far as concerned the battle fleet. The position was not altered by a few bold mine-laying undertakings on the English coast. Ingenhol was awaiting the English in the Bight of Helgoland in defensive formation, a point which they were bound to find out after a time. So arrived August 28, a day fateful, both in its aftereffects and incidental results, for the work of our navy.

Early that morning, in murky weather, small English cruisers and torpedo boats of the newest design had attacked our outpost vessels stationed between Helgoland and the coast, sinking an oldish torpedo boat. As the English vessels drew out to sea again the order was given to our small cruisers lying in the river mouths to take up the pursuit. These ships, not being informed as to the general position, left their anchorages alone, without the support of the torpedo-boat flotillas which had been allotted to them, rushed out to sea with all the enthusiasm of the first fight, and about 60 knots from Helgoland met a large number of enemy reconnaissance vessels, including four battle cruisers. It was doubtful whether heavier squadrons were present in the rear. The *Koln* and *Mainz*, fighting bravely against far superior forces, were shot to pieces and sank.

The crucial point seems to me to be that on the approach of the English the order was not instantly given. "The whole fleet to sea, with every vessel we have." If there were larger elements of the British fleet in the Bight, there could be nothing better for us than to come to battle so near to our own ports. If the English had only weak forces and fell back, the fleet had at any rate the opportunity of a remarkable good practice in the deployment of all our vessels from out of the river mouths and in their assembly with the prospect of battle. Unfortunately this was not done, nor were the cruisers reinforced. The order was merely given for one of the squadrons to put itself in a fuller state of preparation to sail. I, in G. H. Q., did not at first understand the incident, and I wrote to a friend who had been engaged for an explanation, mentioning at the same time the consequences that would arise if the fleet did not come to battle. In the answer I received the view of the navy command, that we ought to await the English in the Bight of Helgoland, resting on our mine barriers there. The judgment of the majority of officers was to the contrary. The crews, too, were disappointed that they had not come to a fight, and their bitter criticism found expression in some instances in a regrettable manner. Messages were chalked on the walls expressing their anxiety to come to blows with the enemy.

The question was put whether it would have been of any avail for our big ships to come out of the estuary. They could have had no success, and this is obvious enough in view of the prevailing low invisibility. After the first news arrived squadron 2 (Scheers) was held ready to raise anchor in case battleships were required to go out in support. However, we received no order to intervene.

At the beginning of the war the Germans were fully convinced that the British fleet would force action in the Helgoland Bight, and their plan of operations was based on this assumption. The British on the other hand expected offensive operations from the Germans, and held the Grand Fleet at the northern bases.

The individual courage and high degree of training exhibited by the German vessels was admirable.

The British inflicted much greater loss than they sustained, due to the fact that they brought on the field of battle faster and heavier forces than those of the enemy.

If we possess vessels both heavier and faster than those of the enemy our task as line officers is simple. If the enemy has a light cruiser which makes 28 knots and has five 6-inch guns we want one that will make 30 knots and carry six or seven 6-inch guns. What we want is ability to overtake the enemy and to defeat him when overtaken. This is a point for the naval constructor to bear in mind in his design and for line officers to remember when criticizing designs.

When our three scout cruisers of the *Chester* class were designed they were given a ridiculously weak battery, and the theory that they were scouting vessels and not fighting vessels, and that if they were given a respectable battery the commander might be lured into a fight and fail to get the information. The obvious and elementary principle that we do not get much in this world without fighting for it was ignored.

The British plan suffered through the fact that it was changed at the last movement with the usual consequences. The failure of Keyes and Tyrwhitt to receive the message that six light cruisers and three battle cruisers were to take part in the operation might have been serious, and as we have seen, caused great confusion.

A plan with which all the participants are familiar is better, even if it may be faulty in some respects, than a more logical plan with which they are unfamiliar.

I am unable to determine from the British official history who was actually in command of the operation. Beatty was the senior officer but he was 30 miles away from the actual point of attack. As there is no British Navy list available, I have been unable to determine the relative seniority of Goodenough, Keyes, and Tyrwhitt.

In view of the visibility conditions, it would appear that the light cruisers should have been much closer to the *Arethusa* and *Fearless* than they actually were. They lost touch in the mist, and due to their lack of support, the *Arethusa* was nearly lost.

The main lessons we can draw from this action are:

Necessity of clear, simple plans.

Necessity of everyone understanding the plans.

Act with all the force available when the situation demands it.

Had the Germans acted on the last principle they might have saved their light cruisers, or at least inflicted more damage than they did on the enemy.

EXTRACTS FROM THE OFFICIAL REPORTS OF FLAG OFFICERS AND COMMANDING OFFICERS OF THE GRAND FLEET ON THE BATTLE OF JUTLAND.

Source: Lieut. Commander H. H. Frost, U. S. Navy.

In this, and subsequent issues of the BULLETIN, extracts from the British official reports will be published under the following parts:

Part I. Battleships.
Part II. Battle cruisers.
Part III. Cruisers.
Part IV. Light cruisers.
Part V. Destroyers and destroyer leaders.
Part VI. Aircraft.

These extracts will be further divided under the following sections:

Section A. Gunnery.
Section B. Torpedo fire.
Section C. Engineering.
Section D. Communications.
Section E. Miscellaneous.

PART I. BATTLESHIPS. SECTION A. GUNNERY. (Continued.)

Fifth Battle Squadron (Rear Admiral Hugh Evan Thomas).

194. At 3.50 p. m. some light cruisers were sighted before the port beam, steering about south-southeast; these were made out to be enemy vessels, but not without difficulty owing to mist. The *Fearless* and destroyer screen were stationed astern, not having speed to go ahead, and when the range was clear a signal was made to open fire at 3.56 p. m. After two salvos short, one cruiser appeared to be straddled—range 19,000—upon which the enemy turned away about eight points and, after one or two more salvos had been fired, were not seen again.

195. At 4.06 fire was opened at an estimated range of 19,000 yards. At 4.08 a signal was made for Fifth Battle Squadron to concentrate in pairs on the two rear enemy ships.

196. The light was very difficult, the targets being constantly obscured, and seldom were more than one or two ships visible at a time. Often only the flashes of the enemy's guns could be seen, while to the southwestward—the direction of Fifth Battle Squadron from the enemy—the destroyers, which were trying to get ahead some distance off, were silhouetted against a clear horizon.

197. At 4.21 p. m. the enemy opened fire on the Fifth Battle Squadron, *Barham* being hit at 4.23.

198. From 4.21 p. m. to 4.40 p. m. firing was intermittent, owing to the great difficulty in seeing the enemy.

199. *Malaya* reports, at 7.20 p. m., one enemy's ship dropped astern obscured in smoke; range, 10,400 yards. "Prepared to open fire on an enemy's battleship very low in the water and dropping astern. According to two officers she suddenly disappeared without an explosion." At 7.40 p. m. an enemy destroyer was seen to sink.

200. *Barham* reports the rear battle cruiser (*Seydlitz?*) was damaged before *Barham* opened fire, and was straddled once by *Barham*. The foretop director officer reports that a hit was obtained at this straddle.

201. The second battle cruiser (*Moltke*) was frequently straddled, but only hits with common shell (three to five) were made out with certainty.

202. Three enemy battleships were observed to be under a heavy fire in the last stage of the action—one was hit simultaneously by two shells and another was on fire amidships.

203. At this time several of the control party in the foretop independently observed an enemy battleship blow up, and a gap in the line after it. *Barham* obtained at least three hits on a battleship of the *Kaiser* class.

"Barham" (Capt. A. W. Craig).

204. Our destroyer escort on the enemy side attempting to pass ahead of *Barham* prevented fire being opened until 3.58, when the two enemy light cruisers (*Kölberg* type) were engaged, range 17,000. These turned away eight points after the third salvo and it is not thought that they were hit.

205. At 4.11 fire was opened with director salvos on the rear (left-hand) battle cruiser, which had smoke issuing from her and seemed damaged, bearing 35°, red; range, 19,000. This ship was straddled, but hits could not be seen with certainty.

206. The enemy presented a fair target at range of 18,000–17,000 yards, and was frequently straddled. Three certain hits only were seen, but after we started using A. P. lyddite hits could not be seen. This would naturally be the case, however, and it was noted that the enemy hits on *Barham*, though doing great internal damage, did not show outside the ship.

207. Toward the latter part of the southerly run the visibility of the enemy got considerably worse, the ships being the same color as the background.

208. The range was now about 19,000 to 20,000, but the enemy could rarely be seen, though the flashes of his salvos were very bright. These salvos were very rapid ripples (almost simultaneous), and it was not possible to lay on them, as they were gone before the sights were on the spot. Our fire was therefore intermittent, and any enemy

which showed up for long range enough to lay on was selected. On the other hand it appeared, looking at the horizon and sky behind us, that we should be very clear to the enemy and offer at times a splendid target.

209. Shortly after turning, the ship was hit by a heavy shell which entered the glacis before No. 1 6-inch gun starboard and abreast the after end of B-turret redoubt armour. This shell burst at the main deck, over the medical store, completely wrecking the auxiliary W. T. office and the medical store, and putting the starboard forward hydraulic pump out of action. The bulk of the medical stores, stretchers, etc., were destroyed, and heavy casualties occurred among the medical party and the wireless staff. The 6-inch hand-ups and dredger hoist starboard and the dredger hoist port were penetrated, and the flash of the shell passed up to the battery deck and ignited some cartridges in S. 2 casemate, causing severe casualties.

210. Large pieces of the shell also penetrated the middle deck, and a piece entering the lower conning tower mortally wounded Lieut. Blyth, assistant navigating officer. The platform deck, forming the roof of the forward 6-inch magazine, was also pierced, and the 6-inch magazine and shell room filled with smoke. There were three other heavy hits during this part of the action, but the first is described in detail, as it was much more vital than the remainder, and might have easily put the lower conning tower out of action. As it was, it put the auxiliary W. T. and starboard fore hydraulic pump out of action and cut a number of fire-control voice pipes and the pipes to the port steering engine telemotor.

211. *Barham* formed astern of *Agincourt* and opened fire again, first at a partially disabled enemy ship believed to be a three-funnel cruiser, and then at an enemy battleship of *Konig* type, second from right of those visible. The range was partly obscured by smoke from our own battleships' guns and funnels, and it was only possible to sight the enemy intermittently, and spotting was very difficult. It appeared, however, that several hits were obtained on a ship of the *Kaiser* class. During this period at least four torpedoes passed through the line close to *Barham*, and were avoided by turning away. A submarine also attacked and was fired on by the 6-inch guns. The attack apparently failed. Enemy destroyers made an attack from the head of their line, and fire was opened on them from 6-inch guns. One was apparently hit.

"Warspite" (Capt. E. M. Phillpotts).

212. On the signal being received from *Barham* to open fire, *Warspite* waited to see at which ship *Barham* was firing, and at 4.2 p. m. fire was opened on the second light cruiser from the van (second from the right), range, 18,500 yards. She was straddled and turned away

either on fire or using smoke protection. On the signal to attack the enemy's battle cruisers, and concentration signal 2P being received, fire was shifted to the rear battle cruiser; range, 19,500; she was straddled several times, turned away, and eventually got out of range.

213. During this time, i. e., while circling, centralized control was impossible, but fire was kept up by all turrets on local control. Closest range was estimated to be about 12,000 yards, and the ship was badly damaged by shell fire, but not completely disabled.

"Valiant" (Capt. M. Woollcombe).

214. At 4.46 p. m. the ship was severely shaken by one salvo, which burst just short on the port side aft, and plunging projectiles may have hit the ship below the water line. On examination on arrival in harbor it was ascertained that no internal damage had been caused.

215. At 5.13 p. m. *Valiant* altered course to port and took up a position on the port quarter of the *Barham*, as the Fifth Battle Squadron at this time was altering course slowly to port to get astern of our battle cruisers, and it was observed that a very accurate fire was being concentrated on the turning point. By so doing, the next four salvos intended for *Valiant* missed her by 10 yards ahead. At this period the enemy was keeping up a very rapid and accurate fire, very small spread of from 50 to 100 yards, range most accurate, but in most cases missing for direction. It was observed that the splashes from the big shells were extremely small, seldom rising above the level of the hull of the ship.

216. At 5.48 p. m. there was a lull in the action, target most indistinct. Lined up director, which had got out of step.

217. At 6.24 p. m. several salvos landed just over *Valiant*, who was also under hot fire from enemy's shrapnel bursting short; the foretop, ship's side, and funnel being hit.

218. At 11.35 p. m. observed heavy night action on starboard quarter. From the evidence we surmised that there appeared on this occasion to be two German cruisers with at least two funnels and a crane amidships, apparently steering to the eastward at a high speed. These cruisers then evidently sighted an unknown small number of British ships ahead of them, possibly a light cruiser and a few destroyers in station about 2 miles astern of *Malaya* (rear ship of the Fifth Battle Squadron). Both Germans switched on top searchlights and opened a very rapid and extraordinarily accurate independent fire on our light cruiser. She replied, but was soon in flames fore and aft. The enemy, after five minutes, ceased fire and switched off.

219. With reference to night attacks, it was noticed that on each occasion German ships fired a white star shell which opened up like a parachute before switching on their searchlights. Searchlights were already trained on the ship before being switched on.

Control.

220. Was carried out from the 15-inch G. C. T., the light was extremely bad, the target most difficult to be seen. During the whole of the action it was only possible in isolated cases to definitely state the nature of ship fired at. Most of the time it was simply a case of seeing a number of patches of smoke, and it was not even possible to distinguish funnels, masts, etc.

221. The actual spotting was difficult only from the point of view of knowing at which target the director layer had fired, and whenever the control officer was observing the ship actually fired at it was easy to see if the splashes were short, right, or left; overs were not seen. Many hits were plainly visible.

222. At about 5.30 such great difficulty was experienced in distinguishing any of the enemy's ships that the control was temporarily turned over to the control officer in the foretop, and the gunnery lieutenant went aloft, but after about five minutes he returned and took over the control in the 15-inch G. C. T., as the conditions aloft were even more difficult.

223. The range finders were a very great help and on three or four occasions, on calling down straddle to the T. S., they reported gun range 300 to 400 yards less than range-finder range.

224. The target fired at had to be shifted a large number of times due to concentration signal, altering course, engaging battle fleet in lieu of battle cruisers, and frequently due to proper target being obscured by smoke and haze.

225. The range-finder glasses (especially those of the after turrets) became covered with cordite smoke, and in the case of Y turret a boy, first class, was employed sitting on the top of the turret cleaning them.

Director Fire.

226. Was used throughout the action; it would have been impossible for individual to have been used, great difficulties being experienced in getting a director gun layer on to the right set of flashes. Turret gun layers could not see sufficiently plainly through their periscopes.

Enemy's Splashes.

227. Although the ship was straddled many times and a large number of shots were only just short, the splashes appeared to be very small and did not rise much above the hull of the ship; no water came on board and no trouble was experienced with spray on glasses.

228. Due to this the control officers experienced no additional difficulties when the ship was being heavily fired at than when receiving no fire.

229. The additional noise was much less than expected and the control appeared to run smoothly, orders being always able to be got

through telephones, the only difficulty being the aloft director voice pipe, due to wind.

Rate of Fire.

230. The fire was kept slow and deliberate, due to the same difficulty of getting on to the right target; on four or five occasions rapid bursts were carried out when it was seen that hitting was established.

Turrets.

231. All turrets fired most satisfactorily and had no breakdowns of any importance; all turret officers reported that they were easily at the ready and only missed a total of three salvos, i. e., "B" three failures to fire, two tubes balances very high, one cause unknown.

232. The firing of the 6-inch guns did not inconvenience the control of the 15-inch guns.

233. In accordance with Gunnery Order No. 56 of 1st April 1915, the director gun layer's eyesight was tested and his eyes showed no ill effects whatever.

Number of Rounds Fired.

234.

	Right.	Left.
A	36	35
B	39	36
X	40	34
Y	35	33
Starboard 6-inch	76	--

235. The two after searchlight barrels and mirrors, which were left up in case of fog, were damaged by blast. One of the 24-inch mirrors, though broken, was held together by the lead backing and wire netting and was quite fit for use. This is the only mirror in the ship so fitted.

"Malaya" (Capt. A. D. Boyle).

236. Considering the vast amount of ammunition expended on us, I attribute the small number of hits to the very small spread of the German salvos; though the firing was good and range taking good, they appeared to use very small spotting corrections.

237. 4.15.—Opened fire on read enemy battle cruiser (*Seydlitz*, we thought); range, 18,500; fell short.

238. 420 to 4.32.—First salvo, short and left; second salvo, ahead and still short; third salvo, over; fourth salvo (4.32), straddled and apparently hit in line with foremast. Range, 19,200. Enemy soon after altered course to port together. Armored director had been used up to now, but shifted to aloft director.

239. 4.45.—Enemy's salvo fell just ahead of us, followed by several more. Our range, 21,000.

240. 5.12 to 5.30.—Enemy's salvos straddled *Valiant* and *Malaya*. At this time we were outlined against a bright yellow horizon, but

enemy were nearly obscured by mist, and we were under a very heavy constant fire from at least four ships of the High Sea Fleet. Only flashes were visible, and six salvos were falling round the ship per minute, and at one time, counting some which were probably meant for *Warspite*, nine salvos fell in rapid succession.

241. It had been decided to fire the 6-inch guns short to make a screen, but before this was done the whole starboard battery was put out of action by shell bursting there.

242. 5.14.—Enemy's salvo fell close over our port bow, sending spray well over the spotting top and black water into the conning tower, etc.

243. 5.20.—Shell struck ship on starboard side forward about water line, shaking the ship very heavily, indeed.

244. 5.25.—Splinter cut steampipe to starboard siren, escape of steam rendering communication with top impossible for a few minutes till shut off.

245. 5.27.—Shell struck ship aft (roof of X turret).

246. 5.30.—Shell struck starboard side of upper deck just above S. 3 6-inch gun, followed by another in the same place, wrecking the 6-inch battery and causing a fire for a short time.

247. 5.35.—Shell struck somewhere along starboard side.

248. 5.37.—Two shells fell just over and abreast of port forward 6-inch gun. The officers aloft saw the shell and state that they fell within a few feet of the ship's side.

249. 5.45.—Ship had now a list of about 4° to starboard, and for a short time guns were firing at nearly extreme elevation. From the top oil could be seen coming from our starboard side abreast of after 6-inch gun.

250. 7.25 to 7.40.—Enemy destroyers made an attack. Opened fire with the two remaining 6-inch guns of starboard battery and also fired two 15-inch salvos at a range of 8,000 yards. Other ships were firing on the destroyers as well, which retired. One at least was seen to sink, and this was the last of the enemy seen in daylight, owing to the battle fleet having turned away.

"Benbow" (Capt. H. W. Parker).

251. 6.29.—After great difficulty, owing to the haze and smoke, succeeded in getting director onto a German ship, apparently of the *Lutzow* class, obtaining two ranges from X turret, mean of 16,000 yards.

262. 6.30.—Opened fire with A and B turrets; green 73; shots lost in haze.

263. 6.35.—Fired again with A and B turrets. Object obscured by haze.

264. 6.38.—A and B turrets fired; object was then obscured by smoke from a ship on fire drifting down between *Benbow* and enemy. This ship was apparently an enemy cruiser with three or four funnels.

265. 7.49.—Collected reports of rounds fired:

A turret	12
B turret	12
Q turret	4
X turret	5
Y turret	5
Total rounds	38

"Canada" (Capt. W. C. M. Nicholson).

266. At 7.25 engaged destroyers attacking abaft starboard beam with our 6-inch. Broadside was divided between left-hand or leading boat and the right-hand boat. At 7.30 fired three salvos of 14-inch on leading attacking destroyer abaft starboard beam. Third salvo appeared to hit. This destroyer vanished in smoke and is believed to have sunk. The right-hand destroyer was also straddled by 6-inch and was lost sight of.

"Vanguard" (Capt. J. D. Dick).

267. Total rounds fired:

12-inch capped common	15
12-inch H. E. common	42
4-inch common	5
4-inch H. E. common	5

268. Two matters contributed to save the enemy battle cruisers from receiving the full fire of our battle line, viz:

Thick weather and the fact that the line of fire was masked to a considerable extent by our battle cruisers and the Fifth Battle Squadron. So far as *Vanguard* is concerned there was a difficulty in finding an enemy ship not masked by one of our own.

"Temeraire" (Capt. Edwin V. Underhill).

269. The *Iron Duke* opened fire at her, followed by other ships and *Temeraire* opened fire at 6.34 p. m. Director was used, and firing was slow on account of the number of ships firing. The first salvo was over, the second short, and the third was seen to hit with at least two rounds, and probably three, this salvo being fired at 8,000 yards. The enemy as now obscured by smoke and splashes from the other ships firing, and, as it was considered certain that she was out of action, fire was checked in order to save waste of ammunition. She appeared again in a minute or two later in a less damaged condition than had been expected, and two more salvos were fired at her.

270. The 4-inch fired 40 rounds. The control and gun laying were hindered by the smoke from the 12-inch and the difficulty in getting

the gun layers on to a definite target. It appears, however, that the gun layers were rather overcareful about their exact target, and sometimes held their fire when it would have been permissible to fire into the "brown."

"Superb" (Capt. E. Hyde Parker).

271. 6.26 to 6.50.—*Superb* opened fire; green 80; range, about 10,400 yards. First two salvos out for deflection (enemy apparently stopped or reduced to slow speed, not at first realized). Third, and fourth salvos straddled and hit. Ship seen flaming fiercely amidships and aft. She disappeared in a dense cloud of white smoke. The commander (G.) and other officers thought she sank, but I find she was seen later by ships astern of us.

272. *Superb* fired by director, which in such misty weather was invaluable. Control officer had no difficulty in getting director on correct object, and no difficulty was found in distinguishing our own salvos. Chief difficulty throughout action was making certain between friend and foe.

"Thunderer" (Capt. J. A. Fergusson).

273. On dropping clear of *Conqueror* we were masked by *Iron Duke*. This target was, therefore, not fired at by *Thunderer* at all.

274. Two *Kaiser* (apparently) class were now observed overlapping each other, showing between *Iron Duke* and *Royal Oak*. As there was a good gap between the two latter, I ordered fire to be opened through the interval.

275. The first salvo fell over owing to the range of the last object being used in error. This was at once corrected and the range from the foretop range finder (13,000 yards) put on.

276. The second salvo straddled in line with her foremast. Two or three large bursts with black smoke were observed, the shell used being powder filled common.

277. A third salvo was fired with no correction and a similar result obtained. This enemy was blazing for the whole length of her quarter deck.

278. *Iron Duke* was hitting this enemy, as was probably *Royal Oak*.

279. A. P. shell was now ordered, but before we could fire had to check fire owing to *Iron Duke* again masking us. By the time we had cleared, enemy had disappeared in the smoke. She was firing rapidly by salvos at first, but shortly came down to slowish fire from one turret.

PART I. BATTLESHIPS. SECTION B. TORPEDO FIRE.

"Iron Duke" (Capt. Fred. C. Dreyer).

1. No torpedoes were fired as the large number of our own ships which from time to time crossed the space between the battle fleets

rendered it inadvisable to fire the slow E. R. torpedoes, and the enemy were out of range for the 30-knot setting.

First Battle Squadron (Vice Admiral Cecil Burney).

2. At 6.45 p. m. *Marlborough* altered course to avoid a torpedo. At 6.54 p. m. a heavy explosion was experienced under the forebridge, the ship taking up a list of 8° to starboard. The torpedo had struck the ship abreast of No. 1 dynamo room and hydraulic room, both of which were flooded, the two men stationed in the former being killed. Water was also reported up to the floor plates in A boiler room and it was considered necessary to draw the fires in that boiler room, but as a speed of 17 knots could be maintained I decided that *Marlborough* should maintain her position in the line and continue to lead her division. The list remained steady and it was reported in less than an hour that the water was being kept under.

3. A torpedo was fired at her at 7.10 p. m. During this time the *Acasta* was passed disabled on the port side, and *Marlborough* avoided three more torpedoes by the use of the helm.

4. The tracks of torpedoes approaching the ship were clearly seen from the top and reported in good time so that they were avoided, with the exception of the one which struck the ship, and therefore it is considered to be probable that it came from a submarine.

5. It is estimated that at least 21 torpedoes passed through the First Battle Squadron, only one taking effect.

"Hercules" (Capt. L. Clinton Baker).

6. 7.35 p. m.—Altered course by subdivisions to south by west.

7. Shortly after this turn two tracks of torpedoes were observed from the foretop approaching from starboard. Turned *Hercules* six points away and two torpedoes passed ship—one along starboard side and 40 yards across bow; the other under the stern, very close.

"Revenge" (Capt. E. B. Kiddle).

8. About 7.15 p. m. a torpedo was fired at the *Von der Tann;* range, 9,000 yards. The torpedo was observed to run true.

"Agincourt" (Capt. H. M. Doughty).

9. 7.08.—Enemy torpedo just missed astern. It had been reported from aloft, and course was altered. This was probably fired by a submarine.

10. 7.35.—Track of two torpedoes running parallel observed approaching. Course altered to avoid torpedoes; passed ahead.

11. 8.25.—Torpedo track on starboard side; turned at full speed; torpedo broke surface about 150 years on starboard bow.

"St. Vincent" (Capt. W. W. Fisher).

12. To avoid enemy torpedoes crossing the track of the First Battle Squadron all ships were frequently under helm, and this led to a little bunching, but mutual understanding and consideration pre-

vented embarrassment—e. g., *Neptune* turns sharply to avoid torpedo—*St. Vincent*, next astern, wishes to keep steady for gunfire and is not threatened by that torpedo—*St. Vincent* must overlap *Neptune* for a short time.

"Collingwood" (Capt. James Ley).

13. *Collossus* now signaled the approach of a torpedo and turned away. Immediately afterwards a torpedo track was seen about 20° abaft *Collingwood's* beam, coming straight at the ship. I am under the impression that the ship was at the time already under helm. Large helm was put on and the torpedo passed very close astern. At the same time another was observed to pass about 30 yards ahead. It is thought that the ship had turned about four or five points when these torpedoes crossed the line.

14. On one or two occasions fires were distinguished on board enemy's ships. It is to me remarkable that, notwithstanding the very weak attacks of the German destroyers (for whose operations the weather conditions were admirable) and the great range (about 9,000 yards) at which their torpedoes were fired, so large a number of their torpedoes passed through the rear of our line. The smooth water helped my foretop lookouts to distinguish the tracks of the torpedoes.

15. It is obvious to me that the fact that all but one missed is principally providential. The loss suffered by these destroyers appeared to be small: only one was observed by *Collingwood* to be put out of action. The great value of this form of attack on a line of ships is, to me, an outstanding feature of the battle fleet action.

16. The apparently concerted torpedo attack by battle cruisers and destroyers covered by dense smoke, and the remarkably close range to which the battle cruisers approached, is noteworthy.

"Marlborough" (Capt. George P. Ross).

17. I have the honor to report that at 6.54 p. m. on the 31st May, the ship was struck by a torpedo in the Diesel engine room. At the same time a periscope was observed by witnesses about 1,000 yards on the starboard beam. No track of this torpedo was observed, though looked for by several observers immediately after the explosion.

18. *Marlborough* continued in the line, and at 7 p. m. three torpedoes were reported on the starboard beam and bow. Course was immediately altered to starboard and then to port; two torpedoes passed ahead and one astern of the ship.

19. At 7.10 p. m. fired a torpedo at a disabled German ship with three funnels.

20. At 7.33 three torpedoes were observed on starboard beam and bow, course was immediately altered to starboard and then to port, one passed ahead, one astern, and the other very close astern or under the ship.

Second Battle Squadron (Vice Admiral T. H. M. Jerram).

21. I should like to mention specially that about 9 p. m. I negatived an attack with Whitehead torpedoes ordered by *Caroline*, as I was certain that the vessels seen on our starboard beam were our own battle cruisers. The navigating officer of my flagship, who has just come from the battle-cruiser fleet, was also certain that they were ours, and saw them sufficiently clearly to give their approximate course, which I reported to you.

Fourth Battle Squadron (Vice Admiral F. C. D. Sturdee).

22. At 8.31 p. m. the track of a torpedo was seen passing ahead. *Benbow* turned toward it. It is believed that the torpedo passed ahead of *Iron Duke*.

Fifth Battle Squadron (Rear Admiral Hugh Evan Thomas).

23. At about 7.18 p. m., observed *Marlborough* hit by torpedo. The squadron turned away to the northward, avoiding a torpedo, which passed ahead of *Barham*.

"Valiant" (Capt. M. Woollcombe).

24. At 6 p. m. fired one torpedo from starboard tube after at German battle fleet, bearing 140° green, result unknown.

25. After becoming engaged on the starboard side one or two chances occurred for firing torpedoes, but they involved considerable risk of hitting our own ships; at 6 p. m. an opportunity presented itself to fire at the enemy's battle fleet. The course was estimated as parallel to our own ships, range 14,000 and bearing 140° green. A 28-knot torpedo was used and started correctly from the starboard after tube. Result of shot not known.

26. The enemy fleet appeared to take great care not to get within torpedo range when on a bearing exposing him to torpedo fire.

27. One torpedo was seen to cross *Valiant's* bows and another is understood to have been seen from *Warspite* to cross our stern. Times not known with any accuracy.

"Malaya" (Capt. A. D. Boyle).

28. *Torpedo.*—Fired one torpedo from starboard after flat at 6.05 p. m.; range of torpedo, 10,750; range of enemy, 12,900, approximately, gyro angle, 20° left. Bearing of third ship, at which ship torpedo was fired, was four points abaft the beam. Torpedo appeared to run correctly.

PART I. BATTLESHIPS. SECTION C. ENGINEERING.

"Iron Duke" (Capt. Fred C. Dryer).

1. The engine-room department experienced no difficulties during the action.

"Marlborough" (Capt. George P. Ross).

2. The explosion distorted the bulkhead on starboard side of A boiler room between boiler room and lower bunkers 90–111. The forward athwartships bulkhead at 92 station was also distorted. The fire bars and fire of No. 1 boiler room fell into ash pans. The boilers and steam pipes remained intact and there was no escape of steam. Water came into the boiler room, the biggest leak being between the framing of the water-tight door to lower bunker 100–111, and the bulkhead to which it is secured. Electric and secondary lighting was not interfered with in A boiler room.

3. The fire and bilge pump, steam ejector, and ash expeller pump were put on the bilge in a most expeditious manner, but water continued to rise and put out fires in Nos. 1 and 6 boilers within a few minutes of the explosion; 10 minutes after the explosion the water put the fires out in Nos. 2 and 5 boilers—as fires were put out boilers were shut off; water continued to rise, when fires were drawn in Nos. 3 and 4 boilers, and the main steam system in A boiler room was then isolated. All efforts were directed to clear the boiler room of water, special attention being given to keeping suctions clear of ashes and dirt. This was successful, and at about 7.30 the water was at the level of the floor plates, and was kept there until the following day.

4. All coal and oil fuel necessary for B and C boiler rooms was taken from the starboard side, and coal was trimmed from starboard upper outer bunkers to lower, and oil fuel pumped from starboard tanks to port emergency tanks; no compartments were flooded for trimming purpose.

Fourth Battle Squadron (Rear Admiral A. L. Duff).

5. The steaming of the *Superb* during the afternoon of the 31st was highly satisfactory, and reflects great credit on the engine-room department.

"Warspite" (Capt. E. M. Phillpotts).

6. At 6.18 p. m. course was altered to the northward, following the motions of *Barham* and *Valiant*, but as we were apparently closing *Malaya* I ordered port 20°, and then the steering gear commenced to give trouble.

7. I have been unable to ascertain the exact cause of the trouble, as subsequent events followed rapidly in succession, and *Warspite* closed the enemy's battle fleet so rapidly that she came under a very heavy

fire. However, after careful investigation I have elucidated the following facts:

(*a*) The thrust bearing on the steering engine heated, probably owing to the ship having been hit about this time, but it was impossible to distinguish in the conning tower between hits and shell falling close alongside. The result of this was a slowing up of the steering engine.

(*b*) Taking into consideration that the ship was steaming 25 knots at the time, the helm was put over far too quickly.

(*c*) The telemotor gearing from the lower conning tower to engine room was bent, probably as a result of (*a*) and (*b*) above.

"Malaya" (Capt. A. D. Boyle).

8. About 6 p. m., G. M. T., several sprayers in A boilers were extinguished by water which had become mixed with the oil fuel in the starboard inner bunkers. These inner bunkers were shut off and oil fuel for the sprayers was obtained from the port side. It was subsequently discovered that the water in the inner bunkers was due to leakage from the outer bunkers, in which two shells had exploded.

PART I. BATTLESHIPS. SECTION D. COMMUNICATIONS.

"Iron Duke" (Capt. Fred. C. Dreyer).

1. The communications worked very well.

2. The navy phones were noticeably better than voice pipes, the former requiring no shouting, but it is full realized that voice pipes possess the great advantage of reliability—in fact, they have to be blown away before being out of action.

First Battle Squadron (Vice Admiral Cecil Burney).

3. The first intimation of the enemy being at sea was received in *Marlborough* about 2.30 p. m., 31 May, a signal being intercepted from *Galatea* to senior officer, battle cruiser fleet, reporting enemy cruisers bearing east-southeast.

4. Further enemy reports were received from various units of the battle-cruiser fleet, and at 3.55 a signal was made by senior officer, battle-cruiser fleet, that he was engaging the enemy.

5. At 4 p. m., senior officer Second Light Cruiser Squadron, reported enemy battle fleet in sight steering east, and at 5 p. m. that they had altered course to north.

6. The situation as it developed was reported by visual signal from time to time to the ships under my command.

7. Shortly after this a heavy smoke screen was observed at what appeared to be the head of the enemy battle fleet, and it was soon apparent that the destroyers were attacking under its cover.

I immediately hoisted the signal "NM," informing our flotillas astern that the enemy flotillas were making an attack. At the same time the preparative was hoisted, and I turned my division away.

8. Before, during, and after the action the wireless telegraphy communication throughout the squadron were entirely satisfactory and invaluable for maneuvering and action signals, especially in the case of the repeating ship (*Bellona*), who was often unable to distinguish the flag signals. No damage to aerials or instruments was sustained except in *Marlborough*, whose auxiliary aerial was partially shot away, and an intermittent earth on the main aerial feeder, which could not be traced for three-quarters of an hour, interrupted the reception of distant signals. In *Colossus* the internal buzzer communication between main office and signal tower was shot away.

No enemy signaling was heard on auxiliary, and though they continually attempted to jam the main installation signals from ships in company were easily overread.

9. About midnight smoke was observed ahead of *Marlborough*, which crossed from starboard to port and back again from port to starboard, and then came down the starboard side.

It appeared to be a large ship and was challenged by *Revenge*, who was answered by two letters, though they were not the correct ones. She then disappeared.

First Battle Squadron (Rear Admiral E. F. A. Gaunt).

10. The ships of the fifth division were well handled and signals, which there was no difficulty in transmitting by either visual or wireless, were promptly obeyed.

"Bellona" (Capt. Arthur B. S. Dutton).

11. As regards H. M. S. *Bellona's* special duty of repeating signals: The signals appeared to me to be comparatively few, simple, and such as might be expected, and I imagine they got through with rapidity and accuracy.

Fifth Battle Squadron (Rear Admiral Hugh Evan Thomas).

12. At 4.40 p. m. enemy destroyers were observed to be attacking, and were driven off by our light cruisers and destroyers attached to the battle-cruiser fleet. The squadron was turned away by "preparative flag," and torpedoes were observed to cross the line—one ahead and one astern of *Valiant*, the second ship.

13. At 4.50 p. m. *Lion* approached the Fifth Battle Squadron steering to the northward, with the signal flying to the Fifth Battle Squadron, "Turn 16 points in succession to starboard"; this turn was made after our battle cruisers had passed at 4.53, and the Fifth Battle Squadron altered course a little further to starboard to follow and support the battle cruisers.

14. At 4.56 p. m. *Barham's* auxiliary W. T. office was wrecked by the explosion of a shell on the main deck, and the warrant telegraphist and all the operators killed.

15. At 5 p. m. *Barham's* main W. T. was put out of action by the explosion of a shell which cut the feeders.

16. It, therefore, became necessary to make a large turn to port to form astern of the *Marlborough's* division, and to prevent masking the fire of the battle fleet. This was done without signal, and all ships were exceedingly well handled by their captains, and came into line by turning with *Barham* in the quickest possible time.

17. At 7.42 p. m. altered course by signal, leading ships of divisions together to the south, *Marlborough's* division on the port beam. At 8 p. m. turned to the westward to increase distance from *Marlborough.*

"Barham" (Capt. A. W. Craig).

18. *Barham* was now without wireless communication, as the auxiliary office was completely wrecked, and the main W. T. feeder and action feeder had gone, consequently the position of our battle fleet was not known until a part of them were sighted before the port beam shortly after 6 p. m.

"Valiant" (Capt. M. Woollcombe).

19. All communications, gyro compass, etc., were intact. Navy phones could be used at all times in spite of shell bursting close to the ship.

"Malaya" (Capt. A. D. Boyle).

20. *Gyro compass.*—Masters remained on meridian. The repeaters got out of step when our guns fired. After the action, remained in step when the compass platform repeater was isolated, an earth having developed on this circuit in the starboard battery.

PART I. BATTLESHIPS. Section E. MISCELLANEOUS.

First Battle Squadron (Rear Admiral E. F. A. Gaunt).

1. Whatever circumstances may have constrained the battle-cruiser fleet to fall back upon the battle fleet in the manner it did, the result was unfortunate. The fifth division was unable to open fire upon the enemy owing to the battle cruisers being in between, and when they cleared from the battleships it made it extremely difficult to ascertain whether ships coming into view through the mist were friend or foe.

"Neptune" (Capt. V. H. G. Bernard).

2. 6.50 p. m.—Passed *Acasta* hove to and putting collision mats over two holes, one on starboard quarter and one on port bow.

3. The white ensign flown by our ships did not seem to stand out clearly at a distance in the white misty weather, nor the union jack either.

4. It is not known why the red ensign was abandoned, but it is considered that red shows up better than any other color against any

background likely to be met with, and a large red flag, flown in a conspicuous position, such as the foretopmast head, is recommended.

Second Battle Squadron (Vice Admiral T. H. M. Jerram).

5. As leading ship, in addition to the hazy atmosphere, I was much hampered by what I imagine to have been cordite fumes from the battle cruisers after they passed us, and from other cruisers engaged on the bow; also by funnel gases from small craft ahead, and, for a considerable time, by dense smoke from *Duke of Edinburgh*, who was unable to draw clear.

"Benbow" (Vice Admiral F. C. D. Sturdee).

6. The flag of Rear Admiral Alexander L. Duff, C. B., was hoisted in the *Superb*.

7. The ships under my direct command were the *Benbow*, *Bellerophon*, *Temeraire*, and *Vanguard;* they formed the fourth division of the battle fleet, with the *Benbow* leading.

8. The *Superb* and *Canada* were in the third division under the immediate command of the commander in chief who led that division in the fleet flagship *Iron Duke*.

9. The fourth division being placed in the center of the fleet conformed generally to the movements ordered by the commander in chief.

10. On one occasion only was any separate action necessary, when at 7.10 p. m. a destroyer attack was observed. The fourth division were then ordered to turn away by subdivisions two points in succession in conformity with the Grand Fleet battle orders.

"Vanguard" (Capt. J. D. Dick).

11. 5.55.—A ship on starboard bow (probably German) flashing by signal "IAR" ("Stop engines"), Vocabulary Signal Book No. 2. She continued repeating this for some time.

12. It is not known whether the enemy battle fleet was present or not. They were not seen by *Vanguard*.

13. The employment by the enemy of a destroyer smoke screen appeared to be skilful and well timed, and it probably saved one of their heavy ships (? *Lutzow*) from destruction by hiding her from view.

REPORT ON MAGDALENA BAY, MEXICO.

Source: Reliable.

(152.)

March 22, 1921.

A family named Molenias, living on Santa Margarita Island and described as the worst robbers on the island, have seven Springfield rifles from the wreck of the *H–1* at present. Salvador Salgado, reported as Salgava in attached reference, has at present one Spring-

field rifle and 125 rounds of ammunition. Capt. Gus Knowles, of the *Caterina*, *R.*, a 300-ton freight and passenger boat recently purchased in New York for Lower Coast Trading Co., is reported to have a Swiss chronometer from the *H–1*. This chronometer was given or sold to him by Salgado and is probably the "watch" mentioned in reference. He was given other articles, including the compass from the *H–1*, by the Molenias family.

The offices of the Lower Coast Trading Co. are reported to be in American National Bank Building, San Diego (rooms 510, 511, 512). Moreles, mentioned in reference, can be reached through Capt. Johnson, of the *Vacero*, belonging to Vail & Co., of Los Angeles.

There is no information as to the missing confidential publications. It is thought they were thrown away, as the looters of the *H–1* were ignorant, uneducated peons.

MOTOR-SHIP ECONOMY.

Source: Lloyd's List, April 2, 1921.

(3049.)

2 April, 1921.

The owner of a motor ship which inaugurated a service carrying Canadian wheat from Vancouver through the Panama Canal to London, recently remarked that the daily consumption of oil for this vessel amounted to 10½ tons, whereas a corresponding steamer would need 50 tons of coal. The inference is that it is on account of this economy of the motor ship that it is possible to maintain a profitable service of this sort at a time when freights are low and there is a marked depression in the shipbuilding industry. It is significant that among all the vessels that are now laid up on account of the shortage of freights it is difficult or well nigh impossible to find a motor ship, mainly because of their low operating costs and particularly on account of the small fuel bill. It has now been very definitely determined that the average coal fired steamer burns four times, and the oil fired steamer two and one-half times, as much fuel as a corresponding motor ship, and with all the fluctuations that have taken place in the prices of coal and liquid fuel during the past two years, the motor ships have at all times been able to show an economy in the fuel bill of between 40 and 50 per cent. These facts naturally carry more weight in a time of depression when every economy has to be studied than in periods of great prosperity, and it is not surprising therefore that shipowners are not giving greater attention to the motor ship than was the case a year or two back when freights were so high that no difficulties were experienced in making even uneconomical steamers pay handsome dividends. It is apparent that while the present

conditions continue in the shipping world the effect of motor ships competition will be more keenly felt, and there is a distinct possibility of certain trade being captured by such vessels on account of their economical operation. This is a point which British shipowners will have to bear in mind in view of the large fleets of motor vessels owned by some of the Scandinavian concerns, for it is not improbable that trades which are now acquired by motor shipowners will be retained by them in normal times.

THE NAVAL WAR, 1914–1918, NORTH SEA (FROM THE GERMAN NAVAL STAFF HISTORY).

[The first installment of this translation appeared in the Monthly Information Bulletin of 15 January.]

Chapter 5 (continued).

Meanwhile the *Stettin* in the further course of the fight, in spite of the violent enemy fire from numerous opponents, had received only one hit, which struck the fourth starboard gun under the gun cover, killing two men, wounding one man severely and four slightly. It is strange that the destroyers did not change to torpedo attack, and instead of the utmost use of it, as required, in this case limited themselves to the slow and less effective artillery fire. However, the effect of our own fire must be considered as slight. To be sure, with an initial distance of 85 hm. the shortest range had amounted to only 46 hm., but the artillery officer was obliged, after he had fired the third salvo, on account of the frequent changes in formation and the high excess in speed of the opponent, as well as because of the changing of our own course several times for reasons of navigation and the constantly varying visability, to shift the target several times so that unfortunately only a few covering salvos on different targets were observed. A really effective fire could not be maintained.

As the distance, as a consequence of the slow speed of the vessel—the steam pressure had meanwhile fallen so low that only 15 nautical miles could be made—rapidly increased, the firing had to be stopped at 9.10 a. m. at a distance of 90 hm., after the task of covering the Vth torpedo boat flotilla had been successfully carried out. The commander decided at first to return to the Sellebrunnen Buoy, so that the ship would be exposed to further engagements only after getting all her boilers going so the maximum speed would be attained. During the fight some on the *Stettin* thought they saw a large merchant steamer behind the enemy line. This caused the commanding officer to report the sector in question—that is, squares 154 and 155 E.—as mine suspicious. As turned out later, there actually was at this time a merchant steamer in the vicinity of the fighting

vessels. It was the Norwegian steamer *Kong Guttorm*, which had resumed its regular trips between Christiania and Bremen in those days and was on the point of picking up the German pilot north of Helgoland when it suddenly was in the midst of a rain of shells. It was hit several times, and, unfortunately, three men of its crew were hit by shell splinters. According to a report of its captain, one of the English destroyers had come up at full speed and fired continually at the steamer until the latter by hoisting the Norwegian flag made its neutrality evident. One of the shells was later found unexploded on the ship and proved to be English.[1] Accordingly the report of mine laying in the above sector rested on a manifest error.

The premature turning off of the *Stettin* toward Sellebrunnen due to the fall in steam pressure and the opponent's chance of escape must be regretted, for meanwhile the enemy attacked the center of the outpost line and the boats of Third Mine Sweeping Division there and began to roll them up. Since 8.40 o'clock the *D–8*, the leading ship, with some other boats of the mine-sweeping division, had been there in an extremely lively fire of one of the English cruisers and of the destroyers, as the *S–13*, one of the last boats of the Fifth torpedo-boat flotilla to return, was able to observe from the Rathurn Buoy.

On the *D–8* gun thunder was heard at 8.15 o'clock in a northern direction, but at first it was attributed to gunnery exercises. Then a radio message made it clear that a U-boat had fired torpedoes and that the reported enemy forces were steering a northwestern course. This news confirmed the division chief, Lieut. Eberhard Wolfram, in remaining at his station, so that enemy U-boats coming to the surface could be kept from breaking through in accordance with the purpose of his outpost position. Unfortunately, as has already been mentioned, the sending of the radio from the *G–194* concerning the appearance of surface forces was delayed 20 minutes, so that subsequent events were a complete surprise to the division chief and his boats. He reported concerning them as follows:

At 8.30 a. m. a German flotilla came suddenly out of the mist from the north, which headed at full speed for Helgoland. Soon thereafter the pursuing English forces were sighted, and I at once left at top speed for Helgoland. At 8.40 o'clock the English opened fire on the *D–8*. As soon as the enemy vessels could be better determined—a cruiser and 10 to 14 destroyers were made out—I ordered fire to be opened with the port bridge gun and the stern gun. As the distance decreased I turned to starboard so as to put our stern to the enemy. This course I was unable to maintain for long, as I could not depend upon support in the south at the right time, and a cruiser was threatening to cut me off from Helgoland. I therefore shaped my course again for the Helgoland, but had to take account of the fact to be sure that the *D–8* offered a better target than before

[1] According to the "Norges Handels og Sjofaerts Tidende" of Sept. 22, 1914.

Consequently the boat up to 9.30 o'clock had to experience a hail of shells from close-quarter distances of from 10 to 40 hm., the number of which the division chief put at 600 while in Helgoland, where only the last part of the fight could be observed, 200 shots were counted. Nevertheless the enemy obtained only five hits, for frequently the shots went far over the vessel and besides most of the shells on striking the water did not detonate, but rebound after striking, keeping on and skipping up to 20 m. high in the air without doing any damage. Also the effect of the first 15-cm. hit under the water line spent itself in the coal of the full engine bunker, so that the partition toward the engine was not pierced even once, but only bent inward. Likewise the following hit on the stern railing was of no consequence, but the third, a 15-cm. shrapnel, pierced the side in the forward berth deck above and below water like a sieve. A real result was first attained when a 15-cm. explosive shell hit the aft edge of the bridge. It killed the commanding officer, Lieut. Weiffenbach, wounded the assistant surgeon, Dr. Seyberlich, severely, and made 15 to 20 men unfit for service. At the same time the auxiliary steam pipes under the forecastle and in the fireroom were cut so that the boat was completely enveloped in steam, however the engine kept on working, although constantly slower until the boat was clear of the fight and could be taken in tow. Not until Helgoland appeared clearly out of the mist and the small cruiser *Frauenlob* was sighted to southward did the pursuers relinquish the boat and give up hope, after the escape of the Fifth Torpedo Boat Flotilla, of destroying at least this one lone boat. Doubtless they took it for a high-sea torpedo boat, for even from the *D–8*, in spite of the slight distance, the opponent could only be made out as shadows in the mist.

The 25-year-old boat with its antiquated armament of three 5-cm. 40-caliber rapid-fire guns defended itself bravely. Eighty-five shells were fired against the enemy, and even some hits were observed, the effect of which must have been slight, of course. It was not possible to fire torpedoes as the distance up to the end of the fight remained too great for the old torpedo. For 40 minutes the crew had withstood the violent rain of shells and had done everything they could to harm the enemy and to bring their vessel out of range. The division chief expressed himself as follows:

> The conduct of the crew was blameless, the general spirit the best, for the most part humorous, in spite of the fact that no one could count any longer on escape.

Besides the commanding officer and surgeon, 11 men had fallen, 1 officer and 12 men were severely wounded and 7 men slightly, among them the officer of the watch, Lieut. Baron von Rotsmann, as well as the helmsman and engine telegraph operator who, besides the

division chief, were struck by splinters of two shells striking the water immediately beside the vessel.

With this fight began the history of the famous deeds of the Third Mine Laying Division but also the serious succession of their sacrifices for the fatherland. Heroically had the crews of the leading vessels as well as those of the other ships in the fight stood their baptism of fire. Of these there were the *T–34*, standing north of the *D–8* and the three southern boats, *T–33*, *T–37*, and *T–35*, as well as the *S–73* just returning from Helgoland with dispatches which got into the zone of fire of the enemy cruisers at almost the same time as the leading boat. All had at first assumed the gun thunder to be due to target practice and had also received no radio messages which might have warned them.[2] They saw themselves therefore suddenly placed before the enemy and chased by a cruiser and about 10 to 20 destroyers, almost without the possibility of escape on account of their slight speed of about 15 nautical miles and without any chance of being able to considerably damage the enemy with the only guns available, 5 cm. guns. But as the *Stettin* freed the Fifth Torpedo Boat Flotilla so in this case the small cruiser *Frauenlob* got these boats out of their hard-pressed situation so that all escaped, although of course only after the *T–33* in addition to the *D–8* had been so seriously damaged that it likewise had to be towed to Helgoland.

The battles were in detail about as follows: The *S–73*, Mine Quartermaster Von Staden, commander, warned by the shells striking in the vicinity of the leading vessel, was, however, bombarded by the enemy for seven minutes. On the other hand the *T–33* very soon got into heavy enemy fire. From this boat could be seen at 8.10 o'clock in a north-northeast direction the leading boat, and the *T–34*, being chased by the superior opponent at top speed and firing vigorously, headed for Helgoland. At 8.40 o'clock, however, the enemy made a turn of about four points to starboard and at the same time opened fire with the forward guns on the *T–33*, with which it was in direct line. Concerning the further course of the fight the commanding officer, Lieut. Kaehlert, reserve, reported as follows:

As I saw that I could no longer reach Helgoland, I kept on a course for the Wesermouth, ahead of the enemy, so as to offer as small a target surface as possible. At the same time I tried by zigzag courses to make it difficult for the enemy to hit, which, in my opinion, succeeded, as all shots landed too far to the right or left of me. The enemy approached noticeably and showered on me a hail of shells. When he had approached to about 20 hm. I opened fire at 8.45 a. m. and came up with the bridge of the cruiser. The hits were very difficult to make out. The gun personnel worked very calmly and accurately. The enemy approached rapidly and all of his boats bombarded me heavily.

[2] The oldest small torpedo boats had no radio plants.

The fire was answered by my boat as well as it could be with a 5 cm. gun, well and rapidly.

At 9 o'clock the first hit came, killing one man and severely wounding Chief Machinist Stute.

At this time the small cruiser *Frauenlob* came into sight in the east on a northern course, at 9.10 took part in the fight and started violent fire at the enemy. The report of *T–33* continues:

At 9.12 o'clock I saw in a short time and one after the other two of our shells strike the enemy cruiser; one on the forward funnel and one under the bridge. Whether these caused much damage could not be determined. At 9.15 a. m., quickly one after the other, two enemy shells struck my vessel. One hit the ventilator hood of the fireroom ventilator, one the engine room. Both exploded.

As a result two men were seriously wounded and one man slightly.

The engine stopped and the water rose very rapidly in the engine room. I now drifted helplessly and the enemy rushed on at high speed. The enemy was bombarded constanty by us as fast as possible. The *Frauenlob*, too, covered the enemy with violent fire. I observed that two shells from the *Frauenlob* hit the cruiser, one behind the fourth funnel, where immediately a yellowish red flame was seen which went out after some minutes; the second in the stern, just above the water line. The enemy had now approached to within about 800 m. from us, so that it had the appearance as if the cruiser was trying to overhaul me. Suddenly, at 9.20 o'clock, the boats on a steam-whistle signal of the cruiser (two long blasts), made a turn of about eight points to southwest and left at high speed, gradually ceasing to fire in so doing. I fired a few more shells after them and then stopped firing. Sixty shots had been fired by us in 35 minutes. The enemy vanished to the southwest, whence I later heard renewed gun thunder.

The boat was picked up by the *T–34* and later by the *V–3* and *Frauenlob*, with steel hawsers, and then towed to Helgoland. Also on this boat the crew, which could only defend itself with a 5-cm. gun, did not rest for a moment and carried out all orders with presence of mind and rapidity. Exposed, unprotected to the enemy fire, all worked with the utmost exertion to keep the boat fit for battle, and in so doing made the day memorable for deeds of bravery.

In addition to the *T–33* the *T–37* standing south of this boat toward 9.20 a. m. suddenly found itself bombarded out of the mist by shells while the enemy at first only recognized by the flashes of the guns could not be made out until he was 25 hm. from the boat. The commander, Mine Laying Quartermaster Schweitzer, ordered the fire to be replied to at once and to be directed primarily against the second of the four pursuing vessels. When about 20 shots had been fired there rose from this vessel a big column of steam, and after some more shots the pursuit was stopped. The fight had lasted from 9.20 o'clock to 9.45, in which about 40 shells had been fired at the boat without hitting. Also a torpedo fired at the *T–37* had passed close behind the stern.

Meanwhile the enemy, keeping on to the southwest, had encountered the next boat *T–35* and opened fire at 5,000 m. Soon salvo after salvo struck at a very short distance from the ship, the commander of which, Lieut. Ernst Enderlein of the reserve, only then recognized that contrary to his first assumption he was not dealing with German, but with English boats. Immediately thereafter about seven to nine destroyers were visible coming out of the fog which pursued the boat, keeping up a violent fire for about 10 minutes. About 60 to 80 shells fell, some so close to the boat that the spray of the hits went over the deck; nevertheless it was only hit once, and by this the night signaling apparatus was shot away. Unfortunately, the distance remained too great for the target to be reached with our own 5 cm. guns. In spite of the surprising encounter the crew without being able to defend themselves did their duty to the utmost. On the return the commander reported to several of our passing cruisers that enemy torpedo boats had broken through, and then along with the *T–37* reached the Jademouth at 11.50, whence the boats later returned to Helgoland.

From the position of the *T–35* the enemy must have turned off to the west for the two boats to southward. *T–25* and *T–71*, of course, heard the gun thunder, but sighted nothing of the enemy, and remained without receiving radio reports at their outpost position up to 8 o'clock in the evening.

On the eastern flank of the outpost line of the mine-sweeping division, the *T–31*, commanded by Chief Mine Quartermaster Manneck, standing 2 nautical miles north-northwest of Sellebrunnen, had observed the fight of the fifth flotilla, and after several shells had struck in the vicinity, sought shelter in the north harbor. Also his neighbor on the right *T–40*, commanded by Lieut. Massner, reserve, was warned in time by the *G–193* and went to Helgoland, while the boats on the eastern flank, *T–29* and *T–36*, did not leave their posts until at 3.30 p. m., on special order, and went back to Helgoland.

We now return to the attack of the *Frauenlob*. On this cruiser, which in the morning was at its regular outpost position north of the Jade, the commanding officer, Commander Monsen, at the beginning of the engagement soon recognized from the rapid and numerous salvos that it was gun thunder and not a practice. At 8.58 he gave orders to proceed at top speed for the gun thunder and ordered the ship cleared for action. Commencing the further course of the fight, he reported as follows:

After some minutes there was seen at high speed torpedo boats and mine sweepers, as well as fishing steamers of the outpost line, striving to reach the bases in particular in the direction of Helgoland. Soon thereafter occasional and later numerous splashes were observed in the vicinity of the boats, but the enemy could not be made out. Finally emerged a well-defined hull of a ship

with a mast, three funnels, vigorously firing on a course west to north, ahead of it about 6 destroyers, in the wake at some distance about the same number. The boats were very much like ours, so that doubts existed as to the nationality. Apparently the *Frauenlob* was sighted by the opponent as well and fire was immediately turned in our direction.

While the mine-sweeping vessels, freed from their pursuers, got to safety, the *Frauenlob* opened fire on the enemy cruiser without considering the destroyers at 9.08 o'clock at a distance of 60 hm., maintaining the previous course and sharply approaching the enemy. Only when the intention of encircling entertained by the enemy cruisers was recognized and some of them already bore on the port side of the *Frauenlob* did the commanding officer go west-southwest.

In spite of the extraordinary rapid approach to close quarter fighting distance and the change in course with the fourth salvo at 9.15 o'clock and a distance of 45 hm. the artillery officer, Lieut. Eberhard von Muller, scored the first hit on the enemy cruiser at the top of the third funnel, a bright flame following the hit. The enemy cruiser turned off on a northwestern course while the *Frauenlob* followed it on the same course at a distance of 32 hm. with a continual rapid fire. Although the method of shooting in this case was made very difficult by the impossibility of observing the splashes and by changes in course, still further hits could be observed by the development of great black clouds of smoke. Then, however, the enemy cruiser succeeded by its considerably superior speed, which just then became fully evident, in shaking off the obstinate pursuit and soon thereafter disappearing in the mist with the destroyers. In view of the slight range of our own torpedoes 23 hm. and the usual astern position of the ship to the enemy the torpedo could not be brought to bear.

In the only half hour but bitter fight at very short range the *Frauenlob* had also suffered. The loss in personnel was 5 dead, 13 seriously and 19 slightly wounded, not counting those superficially wounded, and were chiefly among the gun personnel, order transmitters, distance measurers, and ammunition men as well as the observers in the crow's nest while the engine personnel (under the armor deck) got off without any loss.

The enemy had fired very rapidly but prevailingly short so that often second shots passed over the ship without doing any damage. Greenish-black and at times also yellowish clouds of smoke marked the explosion of shells, but in this case, too, the observation was made that a considerable number of the enemy shells did not detonate.[3] About 10 hits could be counted which had caused considerable but, for the fighting power of the ship, inconsequential

[3] For example, a 10.2-cm. shell fe'l after penetrating a ventilator or shaft almost without force down to the torpedo broadside compartment without exploding.

destruction of material. The port outer edge of the conning tower and likewise the after fire control platform were hit. Another shell exploded in the forward crow's nest and destroyed the radio yard-arm and the antennæ so that the main net came down from above and the radio plant was unusable one and one-half minutes after the fight began.

Not until after the battle could radio communication be restored and a report be made to the authorities of the events. In addition, a 15-cm. shell tore a large hole in the mine-protected deck, while several shells pierced the port side, one of them just above the water line. However, apart from the radio net no fighting elements were destroyed and in particular all guns remained usable.

The conduct of the men was excellent in the opinion of the commander. He reported as follows in this connection:

> The reservists are specially included in this praise. The extraordinary quiet on deck and on the strongly attacked bridge deserves to be especially emphasized; it exceeded by far the enforced calm during "clear-ship" drills of the but brief training period. The transportation of the fallen or injured during the lulls in the fight went on punctually and according to orders. Nowhere were lamentations or groans heard.

After the battle there was observed in the direction in which the enemy had run out of sight air apparently damaged mine-sweeping vessel with the signal: "Am in urgent need of assistance." It was the *T–33*, leaking from hits. So as to keep it from sinking it had to be taken alongside by the *Frauenlob* at once and made fast to the *V–3*, which had meanwhile come up. After the damaged boat had been towed in this way to Helgoland the *Frauenlob* at 11.30 started with the dead and severely wounded on board for Wilhelmshaven.

While these engagements of the *Stettin*, *Frauenlob*, and the Fifth Torpedo Boat Flotilla were in progress, the torpedo boats standing in the outer outpost line, with the exception of the boats *G–196* and *G–194*, already discussed, were passed over. The flotilla boat of the First Torpedo Boat Flotilla, *V–187*, had, without being able to see its neighbor on the right, *G–194*, likewise received at 8.5 a. m. a radio report from it, "Am chased by large enemy cruiser," and thereupon kept on to the north for a short time, trying to get in touch with its right-hand neighbor. Instead of its own torpedo boat as expected, there came in sight, however, after a quarter of an hour about four points to port, two enemy vessels on a southeast course at high speed, which at first were taken for destroyers. Therefore the radio report was sent to the first leader of torpedo boats on the *Coln*, "Two destroyers in sight 116B." In this case the statement of position could make no claim to exactness as the boat had only been in the outpost line for the preceding night, and since that time had had

no opportunity to take land bearings. Not until later were the vessels sighted recognized to be cruisers and the report accordingly corrected. At the same time the *V–187* turned around and at 24 nautical miles speed kept so far from the ships that they just remained in sight. It then kept in contact with them on a course east-southeast, which contact was, however, again lost at 8.35 o'clock.

However, at 9 o'clock there came in sight from the north two more ships almost opposite the *V–187* on a southern course and at high speed at a distance of about 90 to 100 hm., which were taken for armored cruisers. At top speed and with a change in course of about two points to starboard it was possible to avoid these forces, too, and to report them by radio. This report was, however, not received by the command, as the radio communication was greatly disturbed by the opponent, and the sending of keeping-in-touch signals was made considerably difficult by the simultaneous signal interchange between the *Coln* and the *Seydlitz*. All signals consequently suffered considerable delay. To this circumstance is also to be attributed the fact that the flotilla chief, Lieut. Commander Wallis, and the commander, Lieut. Lechler, on the *V–187* had up to this time received no report concerning the forces sighted further to eastward of the boats. Consequently neither officer yet counted on speed superior destroyers but merely on enemy cruisers with which, of course, they must keep in touch. Had, on the other hand, a report been made to them concerning the presence of destroyers it is very probable that as the battle report especially emphasized a further keeping in touch would have been abandoned and a course for Helgoland immediately steered. As matters turned out a course in that direction was first started when the explicit and already mentioned radio report of the first leader of the torpedo boats had been received. Now it was too late, for shortly afterwards, at 9.25 o'clock, gun thunder was heard east northeast, four English destroyers were visible one to two points to port, which apparently had the intention of cutting the boat off. Lieut. Lechler immediately turned off to the south so as if possible to get back to the Jade; the engine rooms were ordered to turn out the maximum. Nevertheless the English destroyers caught up, although slowly, so that gradually the course had to be changed to southeast. The surprising appearance of enemy destroyers so far east of our own outpost line seemed to indicate that these had already explored the German Bight from north to south and were now on the return trip west. Meanwhile they had opened an irregular fire at about 60 hm. off the port side of the *V–187*. For the most part the shots on that side were very badly placed and only a single gun obtained long distance shots at regular intervals, which passed close over the bridge. Only at 48 hm. could the *V–187* reply to the fire, as the opponent meanwhile, because of

the boat turning away by four points astern, stood opposite and could no longer be reached with the forward gun. Nevertheless, the position of the boat was not considered unfavorable at this time by the commander, especially as it had the appearance as if the weather would be foggy and would yet enable him to reach the Jade or Ems. Running at a speed of 28 to 29 nautical miles the boat developed thick smoke, besides which going off dead astern hid the boat from view, so that it presumably could have eheld on still longer in this position against its opponents.

Suddenly there appeared at 9.45 o'clock off the starboard side and to the northwest two small cruisers with four funnels proceeding together, apparently accompanied by torpedo boats. On the *V–187* they were at first taken to be our own especially as one of them was making projector signals which were read as German recognition signals by the signal personnel of the boat but which were probably meant as such for their own destroyers. Soon the lively salvo fire begun at a distance of 35 to 40 hm. left no doubt that we had to deal with a new opponent. The fire was immediately answered with the forward gun and apparently not without success but the *V–187* too received the first hit. Only the reckless use of the boat could yet save her. All on board, with the exception of the fireroom personnel, put on life preservers and hand weapons. Concerning the further events the flotilla chief, Lieut. Commander Wallis, reported as follows:

> It was now indisputable that the *V–187* was cut off from her own base. I decided to attempt to break through to Helgoland by an attack on the northern English destroyers. I gave the commander the order: "Turn for passing fight." The middle tube was aimed, off the starboard beam—the torpedo was set for 1 m. depth—and then turned to port so as to have it on the starboard side for the passing fight. At the same time a lively fire was started from all guns. The torpedo of the middle tube was fired at the second destroyer but missed the target.

The destroyers at first apparently surprised stopped firing and in the passing fight in spite of a passing distance of only 20 hm. did only slight damage so that the flotilla chief and commander during the passing maneuver got the impression that the attempt to break through to the east might yet actually succeed. When the boat was opposite the last destroyer and just on the point of turning eastward a new destroyer division appeared on the port side which, at high speed, headed for the *V–187*, while the destroyers just passed individually turned in behind the *V–187* and now an extremely effective fire was directed against it from all sides. One shell hit under the forward 8.8-cm. gun and put the ammunition men out of the fight; from then on it fired but a few shots. Another shell struck the fourth boiler room, another and fragments hit the bridge, then the hits multiplied in incalculable succession so that the boat was completely

enveloped in smoke and vapor. All the boilers were hit; finally the forward turbine got two hits and steam mixed with black smoke poured from the hatch and decklight through which the after gun was considerably hampered. The report continues:

> The commanding officer, Lieut. Lechler, was severely wounded at my side and the helmsman fell. Lieut. Jasper (J. G.) replaced the commander. I gave him orders to prepare explosive cartridges, and as the helm was unmanned and the orders were very difficult to understand went myself to the helm in order to ram the last destroyer of the enemy line. The helm could no longer be put hard over and there was not enough speed in the boat. There was a fire in the ship aft. I received a report that the ammunition was used up and thereupon gave the order to ignite the explosive cartridges placed in the compartment prescribed in the clear for action order. I received the report that the cartridges were ignited. Lieut. Jasper (J. G.) had all compartments searched. I threw the secret books on the bridge overboard and gave orders to leave the ship.

While this was happening the stern gun was firing under the direction of Lieut. Friedrich Braune (J. G.), who had his battle station there, slowly at the destroyers. The latter kept on firing but only sparingly and soon put the stern gun out of action. Not until then did the rest of the crew jump into the water and the destroyers stop their fire. Immediately thereafter the *V–187* sunk, shortly after the detonation of the explosive cartridges, with waving flag and flotilla standards, while the destroyers, among these the destroyer *Defender* put out boats to rescue the survivors. Hereby the severely wounded commander, Lieut. Lechler and the likewise wounded flotilla chief, Lieut. Commander Wallis, were taken prisoners.

Shot to pieces by eight destroyers and at least one cruiser the boat sank in spite of the considerable number of hits only after the detonation of its own explosive cartridges, moreover only about 3 nautical miles distant from the region in which a quarter of an hour before the battle of the *Frauenlob* had come to an end.

The behavior of the crew in this unequal fight was worthy of emulation; all strove to be the equal of their officers in bravery, calmness, and cold-bloodedness. The gun and machine-gun crews stayed at their stations until the ammunition was used up or the weapons were unusable and the engine force did its duty up to the end in spite of the increasing dread of the water and steam danger from the incessant hits. Also the radio personnel performed its tasks well, although the sending of radio messages was made especially difficult because of the strong interference of the enemy and the overburdened condition of our own radio traffic. Even after the sinking true comradeship bound officers and men to mutual assistance in rescuing from death.

The other boats of the First Torpedo Boat Flotilla had been more fortunate. The boats of the Second Half Flotilla standing

east of the *V–187* were, as already stated, picked up very soon by the succeeded on the other hand in getting through. Besides the flotilla succeeded on the other hand in getting through. Besides the flotilla boat as a neighbor on the left the *V–188* had been in the outpost line and there at 8.20 a. m., to west-southwest had sighted about 8,000 m. away a U-boat on the surface. The commander, Lieut. Callisen, at once started at full speed for the boat, and as the recognition signal was not answered, opened fire at 60 hm. But even before the second shot could be fired the enemy boat was almost completely submerged, and only twice for a short time was the periscope visible. As the radio transmitter on the *V–188* was not usable, unfortunately a report could not be obtained. However, the report now came in from the *G–194:* "Four enemy destroyers 142-E, course south." The commander immediately recognized the danger of being cut off from Helgoland, and, therefore, at top speed started on a course in that direction, when toward 8.50 o'clock, off the port beam, at 50 to 60 hm., the outlines of two four-funnel cruisers advancing in a line astern could be made out, which, according to radio reports, could only be considered as hostile. The *V–188* turned off once two points to starboard, but had already been seen, for the foremost cruiser now asked with the projector for the sending of recognition signal which was answered by letters at random. Immediately thereafter the commander sighted farther ahead, about six points to port, two more cruisers, apparently of the same type, and turned off about two points to starboard to avoid them. In so doing the neighbor on the right also, the *V–190*, commanded by Lieut. Waitz, was sighted, which soon afterwards cut into the wake of the *V–188*. By another exchange of false recognition signals the enemy could no longer be misled, but opened fire at 9.07 o'clock with well-placed salvos at 60 to 80 hm. At 9.12 o'clock two more English cruisers were sighted off the port beam so that the *V–190* now sent the radio report: "Six enemy cruisers in 132 E." Those last sighted only took part in the fire for a short time, and soon turned off again to the west, apparently seeking for other boats, while the other cruisers followed in the direction of the Jade. At this time there was trouble with the forward main feed pump on the *V–190*, so that the boat at times made only 18 nautical miles. During the pursuit at first only two cruisers continued firing, while the other two were firing at targets apparently off the port side. Not until 9.35 o'clock did these also take part in the fight at about 40 hm., only to turn away to the west immediately afterwards without any apparent reason. Shortly before, three destroyers were sighted three points to port and at the same time there appeared coming from the south the still missing boats of the half flotilla, *G–197*, *V–191*, and *V–189*, commanders Lieuts. Richard Beitzen, Froelich, and Metger. These, on the order

of the first leader of the torpedo boats, had started on a course for Helgoland at 9.10 o'clock and had combined, when at 9.25 o'clock they sighted the other two boats engaged with the enemy cruisers, of which, however, only two could be made out by the leading ship. In the consideration that Helgoland could not be reached, the half-flotilla chief on the *V–191*, Lieut. Commander Tegtmeyer, immediately ordered a course southeast to south for the Jade, and at 9.29 o'clock opened fire on the forward cruiser at a range of about 40 to 60 hm., so as to relieve the particularly endangered boat *V–190*. On account of the hazy air hits could not be observed. At the same time the radio report was sent: "Two enemy cruisers 133–E chasing First Half Flotilla."

The leading enemy cruiser immediately answered with brisk salvo fire from 10 and 15 cm. guns; however, the lighter caliber shells did not explode. Also the opponent did not fire any salvos into the air as customary with us but waited each time for the splashes so that it was possible to avoid the shells by frequently turning by one to two points at the flash of a shot. The visibility changed in this time so much that the cruisers themselves during the fight were not always distinctly to be seen. At 9.33 o'clock they turned hard to westward and then could be recognized as cruisers with four funnels and two masts. Hardly had this movement of the enemy been reported by radio when two more enemy cruisers were sighted which started a lively fire at the *V–188* and *V–190*. To relieve the last boat the *V–191* again opened fire on the forward cruiser with the result that the latter now headed for the new opponent and started a lively, usually covering salvo fire at the leading boat. At this instant a submerged U-boat and another on the starboard side only 400 m. off were sighted, but both disappeared beneath the surface after two shots had been fired at 100 m. on the nearer enemy boat.

Shortly thereafter and in fact at 9.20 o'clock the cruisers broke off the fight without apparent reason and turned to the west. Also of this as well as of the sighting of U-boats the command was informed by radio reports.

Meanwhile the *V–188* with the *V–190*, so as not to permit the route of the Jade to be cut off, turned toward the destroyers so that they got into a short passing fight with these at 50 to 70 hm., but apparently no hits were scored by either party. In this case, too, it was observed that the English 10.2-cm. shells for the most part did not detonate. After 15 minutes the destroyers turned off, apparently boats of the *Acheron* class, but the German boats did not follow them, as the enemy cruisers were still quite near and the other boats of the half-flotilla could not come up for support. After

the enemy forces had gone out of sight all the boats collected at 10 o'clock and headed for Helgoland so as after arrival there to wait for further orders under the protection of the fortifications.

During these engagements in the west the outpost line had been restored north and east of Helgoland by the Second Torpedo Boat Half Flotilla but then about 12 noon it likewise picked up the *V–191* so that now all boats of First Torpedo Boat Flotilla were in position with the exception of the flotilla leader *V–187* and *G–193*, commanded by Lieut. Paul, which remained at its station in the eastern wing until 3.30 p. m., and only then, when orders reached it, returned to Helgoland.

Meanwhile the English destroyers had put out boats at the place where the *V–187* sunk and began the work of rescue when suddenly a small German cruiser emerged from the mist and drove them away by vigorous fire. It was the *Stettin* who it, without recognizing for what purpose the destroyers were staying there, appeared at the scene of conflict only 5 minutes after the sinking of the *V–187*, unfortunately too late for rescue.

Just at 9.30 a. m., this cruiser had been informed by the radio message: "Enemy cruiser in pursuit of First Torpedo Boat Half Flotilla in 133 E," that also the west wing of the outpost line was endangered by enemy attack and had thereupon headed at topspeed, which in the case of this old cruiser was only 22 miles, for this square. According to the battle report of the commanding officer, Lieut. Commander Nerger, the action was as follows:

At 10 o'clock at one point to starboard the *Stettin* sighted light clouds of smoke and turned toward them at 10.02 o'clock. At 10.08 eight destroyers which on different courses were cruising close together in irregular formation were made out and thereupon signal was sent to the commander of the scouting forces: "Am engaged with flotilla in 133 E"; at 72 hm after rattling to port fire was opened at 10.09. Even the first salvos were correctly placed so that fire could be kept up in a rapid succession of salvos. In the following salvos a considerable number of hits were observed.

A little time after the fourth salvo the destroyers ran away in different directions. Two boats went to northward, four to the southwest at top speed; these were pursued further by the *Stettin* without the distance decreasing. Two boats, apparently heavily damaged, remained behind. These and the boats going northward soon passed out of sight.

At 10.13 o'clock the group pursued by the *Stettin* was also so hard to make out that I ordered the fire to be discontinued and turned off to the northeast so as not to be surrounded by the destroyers as the visibility was decreasing. The wake of a torpedo was reported (probably an error) and the prospects of the opponent for torpedo attack were favorable.

The reports of the discontinuance of the fight and its result could not be sent until 12.32 noon as the radio plant was out of order from hits. It read: "133 fight discontinued. English destroyers pursued, several apparently damaged."

Then for the purpose of issuing orders to the U-boat line that had meanwhile been laid out the course southwest for Helgoland indicated on the chart was followed up to 12.18 o'clock.

The range was during the whole engagement approximately the same (70 hm.).

Whether the opponent suffered losses could not be established with certainty. However, the fact that some boats remained at the original scene of action gave ground for hope, especially as in passing this place at 1.10 o'clock there were found scattered over a considerable area very many objects belonging to English boats (fire cutters and likewise many dinghies, some in half sunk condition, cork life preservers, rescue buoys and numerous other articles).

This conclusion of the commanding officer of the *Stettin* is to be attributed to ignorance of the sinking of the *V–187* at this place. From this it is clearly evident that in his attack on the British destroyers he suspected nothing of the rescue work being carried on by the latter. The report closes as follows:

> The *Stettin* in the second fight received a hit in the radio rigging whereby the radio station was out of serivce until 12 o'clock, also a hit in the aft funnel (great splintering) and a hit on the starboard engine without causing any damage.
>
> The losses in personnel were 2 dead, 1 seriously wounded, 8 slightly wounded.

Also the *Hela* had steamed from its waiting position in the east, on the first reports by radio of the presence of enemy forces, at top speed westward so as to be able to take part in the fight, but at 11.05 o'clock in 139, 15 nautical miles southwest of Helgoland, it turned around when it learned from the *Stettin* there that the enemy had withdrawn to the west. The effort of its commander, Commander Paul Wolfram, was thereupon directed to again assume its position behind the northern wing of the outpost line as soon as possible, as this was so far without support.

Besides the *Stettin* and *Hela* the chief of the Fifth Torpedo Boat Flotilla immediately on return to Helgoland caused measures to be taken for the covering of the first Torpedo Boat Flotilla and entrusted their execution to the Tenth Torpedo Boat Half Flotilla under its chief, Lieut. Commander Heinecke. Thereupon the *S–13* brought aid to the damaged leading boat of the Third Mine Sweeping Division while the *V–3* and the other boats of the Tenth Torpedo Boat Half Flotilla immediately advanced to the southwest in a scouting line in order to pick up damaged boats. In so doing the scouting line soon came upon the *Frauenlob*, which had the very seriously damaged *T–33* alongside. The *V–3*, *G–10*, and *G–7* were left behind to participate in the salvage work so that only two boats, *G–11* and *G–9*, could continue the search southwest to the southern boundary

of the outpost line. Having arrived here they turned around and searched northward to the sector of the middle outpost line until towards noon they sighted three drifting English cutters, and on these 1 officer and 44 men of the crew of the *V–187* were taken off. The place where the ship sunk could in this way be established. Only after longer exploration in which three more drifting cutters, which, however, were empty, were found did the boats with the rescued start back for Helgoland. With this the events immediately following the English surprise attack came to their end.

If this description is supplemented by English reports, let it be observed beforehand that for this purpose primarily only the very one-sided and fragmentary public statement of the Admiralty in the Times of October 23, 1914, could be taken as a basis which contained an extract from the battle reports of the English commanders participating therein.

According to this it was the fourth division of the Third English Torpedo Boat Flotilla which at first, toward 8 a. m., had chased the *G–194*. These were followed by the small cruisers *Arethusa* and *Fearless* with the First Destroyer Flotilla and the rest of the Third. Accordingly there were when the fight started not less than 2 cruisers and 31 destroyers taking part, which the Fifth Torpedo Boat Flotilla naturally had to avoid, but which the *Stettin*, later coming up, was not a match for. Nevertheless the commander of the forces on the *Arethusa*, Commodore Tyrwhitt, construed in his report, in complete reversal of the facts a German superiority during the battle, an attempt which is so frequent in English reporting that it can hardly be doubted that it was intentional. He maintained that the *Arethusa* was under heavy fire from two German cruisers from 8.57 to 9.15 o'clock, and indeed by a four and a two funnel cruiser and several destroyers, while, according to our reports, it was absolutely established that the *Stettin* had not fired on the *Arethusa* and did not sight it until 9.05 o'clock, and then only for a short time behind the destroyers, without, however, firing. The *Arethusa* in reality, even before the entry of the *Stettin*, at 8.40 o'clock turned toward the forward destroyers of the pursuit of the *D–8*, first getting into fighting contact with a German cruiser when the *Frauenlob*, at 9.08, took part and continued the fire at close range until 9.25. Almost 1,000 tons larger and 9 nautical miles faster, besides being supported by its own destroyers, the *Arethusa* should have had an easy time with the 11-year older ship. On the contrary, in 10 minutes the former was hit not less than 35 times,[4] and so seriously damaged that, according to the report of Commodore Tyrwhitt, all guns and torpedo tubes, with the exception of a single 15.2 cm. gun, were for the time

[4] Morning Post of January 11, 1919. The Harwich Naval Forces, by F. F. Knight.

being put out of action. On the side of the English commander fell his flag lieutenant, and at the second gun, as a result of a hit, a very lively fire broke out which ignited the ammunition and set the deck on fire. Apparently the British Admiralty looked upon the fight as probably a light one, otherwise the *Arethusa* would not have been exposed here, as it had only been in service a few days, and officers and men were still strangers to each other and were not yet acquainted with the entire complicated organization of ship control, as the English report expressly emphasized. To be sure, the *Frauenlob*, too, had only been in service since the beginning of the war and had a reserve crew.

Also the assertion that the *Frauenlob*, after being hit on the bridge by a 15.2-cm. shell, immediately turned away in the direction of Helgoland does correspond to the facts apart from the correct observation of the hit. In spite of all numerical superiority of the opponent there was all the less cause for this as, in contrast to the *Arethusa* on the German cruiser at this time, all battle elements were still intact. The *Arethusa* reported that "about" this time Helgoland was faintly to be made out on the starboard side. If here we are not dealing with an error, then this is only possible if the heavily damaged *Arethusa*, after breaking off the fight and the passing out of sight of the *Frauenlob*, had lain for a short time to eastward in order perhaps to pick up scattered destroyers. On the other hand, it did not at all events try to resume the battle again, as it was hardly in a position to do this after the loss of its guns. Furthermore, according to the English report all ships were now ordered to proceed westward: at the same time the speed had to be decreased because the *Arethusa*, on account of its injuries, could only make 12 nautical miles. At this time the report came in from the *Fearless* that boats of the Third and Fifth Division of the First Flotilla had meanwhile caused the sinking of the German leading flotilla boat. However it is even now uncertain whether and what cruisers took part in the destruction of the *V–187* as well as in the pursuit of the other boats of the First Torpedo Boat Flotilla. According to a statement in the report of Vice Admiral Beatty it must have been the two small cruisers of the First Light Cruiser Squadron, which earlier in the day had been detached by their leader, Commodore (T)[5] Goodenough, to support some destroyers. These did not return to their squadron until 3.30 p. m. Of course it still remains incomprehensible that the boats of the First Half Flotilla in their engagements claimed to have seen for a time up to six cruisers; in this there is either a possible confusion with destroyers on account of the bad visibility or an omission in

[5] Commodore S=submarine, T=torpedo, corresponding to our U-boat and torpedo-boat leaders.

the English report.[6] Commodore Tyrwhitt claims, then, that on the news that Commodore S, the leader of the U-boats, with the destroyers *Lurcher* and *Firedrake* had been pursued by five small cruisers, he again pushed out his forces eastward and did not turn back until 11.37, as no further reports had come in and the forces were again in the vicinity of Helgoland.

At least the time in these statements must be doubted for according to our reports the last engagements of the German ships came to an end in this part of the battle at 10.13 o'clock while the next engagement did not begin until 11.55 o'clock. Accordingly the only assumption possible would be that in the hazy weather battles had occurred between English forces themselves and had given rise to the call for help of the Commodore S. With certainty, however, the *Arethusa* could not have been at 11.37 o'clock in the vicinity of Helgoland, as at 11.55 it was engaged by the *Strassburg* not less than 30 nautical miles west of Helgoland. Even supposing full speed it is inadmissible that it could have covered this stretch in the meantime, let alone after considerable reduction in speed.

These statements of the English report contain points of disagreement for which an explanation is still lacking.

We now turn to the simultaneously published report of Commodore (S) Keyes, the commander of the Eighth English U-flotilla, who for this undertaking had taken passage on the destroyer *Lurcher*. He stated that the observations made by the *G–194*, *V–188*, and *V–191* concerning the presence of enemy U-boats corresponded to the facts. According to the report the U-boats *D–2*, *D–8*, *E–4*, *E–5*, *E–6*, *E–7*, *E–8* and *E–9*, of the Eighth U-boat Flotilla were available. With the exception of three boats these had been dispatched to positions immediately off the river mouths which they were to take up, after penetration of the German outpost line, so as to prevent the German battle fleet from interfering in the operations of the destroyers flotillas. They had the task of immediately attacking every battleship or large cruiser that might come out. In carrying out this task the U-boats were to remain unseen if possible. On the other hand, the *E–6*, *E–7*, and *E–8*, with which the commodore first proceeded toward Helgoland at daybreak on 28 August, had another commission. They were, in cooperation with the destroyers, to expose themselves as decoys to the enemy and so draw the torpedo boats toward them and in this way drive them toward their own forces.[7] This in itself very daring and only possible provided rapid submersive ability tactic of the English

[6] The latter is correct. According to the meanwhile published first volume of the official English naval war history the entire light-cruiser squadron took part in this first incursion on the German outpost line.

[7] Data partly from "Navy and Army Illustrated" of Nov. 7, 1914.

U-boats was very aptly suited to the previously observed procedure of the German torpedo boats which as a fact had up to this time rushed at top speed for every U-boat sighted. As a consequence of the poor visibility and the smooth sea, the most unfavorable circumstances that can exist for U-boats, they seldom appeared and nowhere made a successful attack. The *E–4*, indeed, tried to attack the *Stettin* at the place where the *V–187* sunk when the latter opened fire on the English destroyers. By a chance change in course of the cruiser, which had not noticed the presence of the boat, the U-boat was prevented from firing. It had to content itself with picking up the English left in boats and with making prisoners of the survivors of the *V–187*, an officer and two men.

In summing up let it be said that the skillfully led and with ample means carried-out attack on the German outpost line could scarcely meet the English expectations of the undertaking. Only a torpedo boat of the outer outpost line fell a victim to the opponents while all other German boats in spite of rapid pursuit succeeded in reaching their base. The damages and losses on the German side were slight, only the *D–8* and *T–33* had suffered severely, but on the other hand the opponent had to yield the field to the materially and numerically weaker German cruisers *Stettin* and *Frauenlob* on account of their gunfire.

The situation was, therefore, at this time even without knowledge of the details of the fight, justly considered as favorable by the fleet commander and the commander of the scouting forces. So far, chiefly destroyers and but few small cruisers had been reported so that an energetic pursuit of the same by the available light forces seemed to promise chances of success all the more, so as it could be hoped through the small cruiser *Mainz* to get at the destroyers from the Ems outward. Such a measure was, to be sure, only justified, if in the case of the opponent, a participation of heavy enemy forces was not counted on and if at least there was felt a numerical equality to the rest of the opponents. A further hypothesis for this were conditions of visibility which made seem possible a timely avoidance of superior enemy forces. Actually, however, the fleet command was in entire ignorance of the fact that in contrast to the weather in the river mouths there prevailed very poor visibility at sea, at places even fog. It is worth noting that not a single report concerning visibility at sea had been requested although battles took place within the immediate vicinity of Helgoland, and it was striking that the guns of Helgoland did not take part. Such a query would, of course, have taxed still further the overburdened condition of the radio traffic. Not until 11.35 o'clock did a telegram go from Helgoland to the fleet command which characterized the weather as "hazy,

range of vision 4 nautical miles." This was highly critical for the small cruisers advancing against the not yet sighted opponent in his full strength. Unfortunately the presumptions did not tally with the facts which caused the commander of the scouting forces at 9.20 o'clock to send the *Mainz* to the rear of the destroyer flotillas at Helgoland. At the same time the air station at Helgoland was ordered by the fleet commander to determine and report whether and what forces stood behind these cruisers as the airship *L–3*, commanded by Lieut. Fritz, by chance, on a trip on account of hazy weather and the enemy's fire, had been obliged to turn around prematurely without being able to make useful statements concerning the type of the enemy vessels sighted. In its radio report, however, the airship had given merely technical reasons of navigation for discontinuing the reconnoissance.

The orders of the fleet command and of the commander of the scouting forces usher in the second section of the engagements—the German counterattack.

The *Coln* and *Strassburg* had at 8.55 o'clock received the order to sail at once for support. In carrying out this order the *Coln* from 10.30 o'clock on with the first leader of the torpedo boats, Rear Admiral Maass, on board, was on the way from the Outer Jade lightship after the enemy retreating to westward, while the *Mainz* had left the Ems a half hour later with the same object.

All cruisers were cognizant of the radio reports that had meanwhile come in, from which it followed that light enemy forces in considerable number had penetrated the inner German Bight, that the *Stettin* and *Frauenlob* had been in action at different times with enemy cruisers and destroyers, and that the enemy forces were now withdrawing in a northwestern direction. To-day for the first time since the beginning of the war the enemy had shown himself in attainable proximity with surface forces. There prevailed on the cruisers therefore because of the military spirit, which filled the entire fleet, the same irresistible eagerness to give close pursuit to the enemy that had carried our army so far into the enemy's country. This thought, supported by the feeling that help must be brought as quickly as possible to the torpedo boats of the outpost line, concerning the fate of which no complete reports had yet come in, put all other considerations in the background. The cruisers coming from the Jade and Elbe at first, therefore, in order not to lose time carried on the pursuit separately without waiting to combine with those sailing later. An assembly of the cruisers for common advance was apparently abandoned for this reason by the first torpedo-boat leader on the *Coln*. All cruisers steered separate courses at top speed for the probable location of the retreating opponent.

RUSSIAN.

Source: Reliable.

20 April, 1921.

Information has been received from a reliable source that at the tenth conference of the Communist Party held on March 16 the attitude of the proletariat and Communists of Russia in the case of the outbreak of war between Japan and the United States was defined.

A resolution was passed at the tenth conference requesting that a world-wide manifesto of the proletariat should be addressed by the executive committee of the Third International, giving notice to the proletariat that a war of an imperialistic character and of wide extent was being planned on the shores of the Pacific. Should this war break out the soviets are warned not to take any part therein, at any rate, in the beginning thereof. The presumption is that the Reds have laid a deep plan to excite the ill feeling existing between Japan and the United States so as to bring on war, using for this purpose the concession made to Vanderlip, and other methods, Russia to remain neutral until the proletariat in Japan and in the United States have an opportunity to rise and destroy capitalism. By the use of the press and of propaganda the soviet government will endeavor to excite the conflict both in Siberia and in China. The March 11 issue of the Mahovik lays emphasis on the conflict of interests respecting the republic of the Far East which exists between Japan and the United States.

SCHOOL OF DOCTRINE.

Conducted at Charleston, S. C.

During the winter 1920–21 a School of Doctrine was conducted at Charleston, S. C., for the training of officers of the destroyer force, Atlantic Fleet. This school, conducted by Capt. H. E. Yarnell, United States Navy, and Capt. C. R. Train, United States Navy, merits the attention of the service on account of the interest aroused in this organization in tactical and strategical problems. The school was in reality an outpost of the United States Naval War College and in fact constituted a preparatory course for that college. In addition to the routine work on problems lectures were prescribed and delivered as follows:

Destroyer organization	Capt. C. R. Train, Oct. 7, 8.
Destroyer seamanship	Capt. C. P. Nelson, Oct. 14.
Handling of men	Capt. C. R. Train, Oct. 15.
Navy regulations	Capt. H. E. Yarnell, Oct. 21.
Fleet and destroyer regulations	Capt. C. R. Nelson, Oct. 22.
Fleet standing orders	Capt. C. R. Train, Oct. 28.
Estimate of the situation	Capt. H. E. Yarnell, Oct. 29.
Order form	Capt. H. E. Yarnell, Nov. 4.

Scouting	Capt. C. R. Train, Dec. 2.
Unsupported attack	Capt. H. E. Yarnell, Dec. 2.
Supported attack	Capt. H. E. Yarnell, Dec. 3.
Screening	Capt. C. P. Nelson, Dec. 3.
General features of an Atlantic campaign	Capt. H. E. Yarnell, Jan. 24.
United States naval operations in the Adriatic	Capt. C. P. Nelson, Jan. 31.
Naval attaché work in Italy during the war	Capt. C. R. Train, Feb. 7.
Organization of the Navy Department for war	Capt. Harris Laning, Feb. 14.
United States destroyer experience in convoy work in the war	Commander C. A. Blakeley, Feb. 21.
The Battle of Helgoland Bight	Capt. H. E. Yarnell, Mar. 7.
Listening devices in scouting	Capt. C. P. Nelson, Mar. 14.
Italian leaders and campaigns of the World War	Capt. C. R. Train, Mar. 21.
Leadership	Capt. C. Courtney, Mar. 28.
Destroyer engineering in its relation to probable destroyer operations	Lieut. Commander P. L. Carroll, Apr. 4.

AUSTRIA—POWDER.

Source: Reliable.

(14421.)

13 April, 1921.

The following information regarding the methods of preparing gunpowder for the Austrian Navy and the experiments made to perfect the powder and reduce the pattern, was given by Admiral Keil, former Austrian Navy, and Capt. Heinrich Huber (former chief of the ordnance experimental section):

The preparation of smokeless powder for the Austrian Navy was, in general, as follows:

(1) Cleaning of the raw cotton.
(2) Shredding of the cotton.
(3) Nitrating the cotton.
(4) Washing the nitrocellulose.
(5) Treatment with acetone to stabilize powder (statically).
(6) Dehydration of the nitrocellulose pulp by forcing same through press with alcohol.
(7) Forming the powder in tubes (these tubes were generally 40 to 50 centimeters in length).
(8) Drying the powder in vacuum chambers.
(9) Mixing the powder.

Each index of powder was then given thorough ballistic tests and the I. V. recorded. The finished tubes were packed into the metallic powder cases, which contained the primer. These tubes were packed tightly into the cases with the bore of the tubes parallel to the axis of the cartridge case. In this manner the velocity of flam propagation was reasonably constant.

When a vessel received several indices of powder the ordnance officer was required to mix these indices thoroughly. If any index was suspected all powder was removed from the ship and an entirely new lot substituted. While this procedure was naturally expensive, the Austrians claimed the *excellent results justified the additional cost.*

The Austrian Navy made extensive tests on the effect of heating of the bore on the exterior ballistics. The results of these tests indicated that after the first "warning shot" the I. V. decreased at a fairly constant rate.

As a result, the Austrian Navy was ordered to fire one complete salvo as warning shot, which was followed by the "ranging shot." No provision was made for the decrease in I. V. on the subsequent salvo, although the Austrians claim that as a result of the extensive tests it would have been possible to make automatic correction for this variation in I. V.

The claim was also made that the size of pattern was very much reduced by the mixing of indices—this apparently having cured all excessive dispersion troubles due to powder.

FORTIFICATION OF PORT LLOYD, BONIN ISLANDS.

Source: Reliable.

(1182.)

30 March, 1921.

The fortification of Port Lloyd, Bonin Islands, has been under way for some time. All labor in connection therewith is being done by enlisted men of the Japanese Navy, and the supervision is entirely in the hands of naval officers. Not one Bonin islander is employed. The naval personnel engaged in this work is quartered on board two naval transports anchored in the harbor.

The fortifications are being built on a high ridge overlooking the harbor and commanding both sides of the island, the entrance to, and the harbor itself. The guns are to come from the Kure gun factory, and are to be 12-inch. None have yet been shipped from Kure.

Harbor reclamation work is also in progress. The shoals are being filled in and the shore line extended to deep water. An army airplane and a naval hydroplane stations are also to be established at Port Lloyd.

TORPEDOES, BRITISH NAVY.

Source: Reliable.

(14395.)

12 April, 1921.

While on a recent visit to Woolwich Arsenal, it was noted by the military attaché that the British are working on a new 21-inch steel torpedo head in which all screw holes are bushed with brass. The

torpedo head was apparently rolled thin steel welded at joints by the oxyacetelyne process. In the particular building where these are being cleaned, there were half a dozen of these torpedo heads lying about.

GERMANY—ARMOR AND SHELLS.

Source: Reliable.

(275–A.)

7 April, 1921.

On March 24, 1921, Commander W. R. Furlong, United States Navy, accompanied by the naval observer visited Vice Admiral Roggs, of the German Navy, who was chief of ordnance in the admiralty during the war.

The admiral stated the following were the tests for Krupp shells:

At 90° the shell should penetrate its own caliber of thickness of armor with a velocity of about 600 m. sec.

At 60° the shell should penetrate one-half its caliber of thickness of armor with same velocity.

In all cases the shell must go through the place without rupture.

When the delayed-action fuse was tested, the results showed explosions behind the plate of from 20 to 30 inches.

In order to save expense in testing, the plate, shell, fuse, and gun were tested at the same time.

The armor-piercing shells were loaded with explosive charges 2½ to 3 per cent of the weight of the shell—the high-explosive shell with 7 to 9 per cent of the weight of the shell.

The English shell at Jutland did not penetrate the German heavy armor and explode on the other side. In most cases, the English shell burst outside of the armor. When penetration occurred, the shell did not explode. In the case of the cruiser *Konigsberg*, one 38-centimeter shell penetrated all four stacks—went under the bridge and exploded in the forward coal bunkers. The parts of shell were found and pieced together. No damage was done to the structure of the ship.

The Germans believed in heavy side armor and heavy armor for decks at the expense of speed. Most English shells which exploded in casemates, etc., were filled with black powder.

The admiral stated that Krupp armor had been tested in comparison with English armor and found to be 10 per cent superior in resisting qualities.

The German armor plate is not backed with wood, but bolted diretly onto the hull plating. The plates are large and taper toward top and bottom in the case of the side armor. The joints are not rabbeted, but butted together and filled with cement. Photographs of the hits on the joint of armor plate showed no damage be-

yond indentations. In some cases the rivet heads were sheared, but the rivets still held. Some cases occurred where the shell glanced off the turret roofs where armor was very thin. This armor was not hardened, and the fact that the shell glanced was due to the elasticity of the turret roof and the low angle of impact.

The fragmentation of German shell was very much greater than the English, and the delayed action fuse apparently functioned well in the Battle of Jutland.

In no case was the propelling machinery or boiler of any German ship at Jutland injured by shell fire. In most cases the hits in the lightly armored portions of the vessel opened up big holes. When these vessels were later torpedoed the holes came under water. This caused the loss of the *Lutzow* and almost lost the *Seydlitz*.

The German Navy did not use gas shells, although Krupp had experimented with the development of gas shells for the navy. They were regarded as being too dangerous for the personnel in handling and stowing.

The German practice was to use high-explosive shell at the beginning of an engagement at long range:

(1) When angle of fall is great?
(2) When range is too great for armor-piercing shell to penetrate.
(3) In order to demoralize the crew of enemy ships.

The shell had a sensitive fuse which exploded on impact against light armor. The armor-piercing shells were used at ranges when the striking velocity was over 550 m. sec.

The secondary battery was equipped with both armor-piercing and high-explosive shell. In many instances English torpedo destroyers were set on fire by one hit from the high-explosive shell of the German vessels.

The admiral spoke highly of the German fire-control system and the work done by Capt. Gluer in perfecting the same.

GERMAN EXPLOSIVES—HEXANITRODIPHENYLAMIN.

Source: Reliable.

(14404.)

6 April, 1921.

An ex-German naval officer has furnished this formula together with a sample of the explosive. The sample is hexagonal, about 3 inches wide by 2 inches deep, and has the appearance and feel of beeswax, though heavier and nearer the color of sulphur. This explosive is said to have been manufactured and used in place of guncotton by the Germans during the latter part of the war.

Method of composing Nh (*hexanitrodiphenylamin*).—As a primordial substance the benzol C_6H_6 may be named here, a carburet of

hydrogen obtained by tar distillation. By adding Cl a chlorbenzol, C_6H_5Cl, is obtained. After nitration, $C_6H_4Cl(NO_2)$ mononitrochlorbenzol, is arrived at, and a further nitrition gives $C_6H_3Cl(NO_2)$ 2, dinitrochlorbenzol. If this is brought together with aniline, $C_6H_5Nh_2$, we obtain:

$$Nh\frac{C_6H_3(NO_2)2}{C_6H_5}(+HCl)$$

under precipitation of the hydrochloric. This product is known under the name of "kaisergelb" (Aurantia). It is purchased by gunpowder factories and is used as starting product for the manufacture. The further nitrition is made with HNO_3 without the aid of H_2SO_4, sulphuric acid.

$$Nh\frac{C_6H_3(NO_2)2}{C_6H_3(NO_2)2}$$ Tetranitrodiphenylamin.

and finally:

$$Nh\frac{C_6H_3(NO_2)3}{C_6H_2(NO_2)3}$$ Hexanitrodiphenylamin.

This product has a light yellow color similar to that of flowers of sulphur, a metallic sound, it is untransparent and has the particularity of giving a yellow color to the hands of the workmen who are manipulating it. As an explosive it has high qualities. The explosive force is higher by 45 per cent than that of the wet compressed guncottons. A percussion cap of 2 grams of fulminate of mercury is sufficient for an instant explosion. The product is not light inflammable and burns without any danger to a heat of 230°. Nh can be compressed like other guncottons and has then a specific weight of 1,61; it can be bored and handled in various ways. The addition of 5 per cent of Japanese wax will make the product fit for storage. Only the high cost is an objection to the general use of this product as an explosive.

SECRET.

KRUPP'S "ABFEURUNGS GERATE" GYRO FIRING SYSTEM.

Source: Reliable.

(14403.)

7 April, 1921.

The original patents for this device were purchased by Krupp from the Austrian concern of Petravovitch about 1909. In its original form it had numerous defects. After acquiring the patent right, the firm of Krupp continued the development of the apparatus, finally bringing same to test on board German battleships in the year 1911–12. In these tests the device was tried out under various con-

ditions, and the results compared with those obtained with the best pointer fire. One series of tests showed the following:

Roll on each side, 12° (15-cm. guns).
Sea quartering and on the beam.
Average range, 12,000 meters.
Tests in the Atlantic Ocean.

The average results of the tests with the device showed dispersions of from 35 to 85 meters. The dispersion with best pointer fire under similar conditions varied from 58 to 128 meters. Another series of tests of approximately this range showed as follows:

With apparatus, 16 shots, range 12,500 meters.
Dispersion, 55 meters.
Without apparatus (pointer fire), 8 shots.
Dispersion, 300 meters.

The German Admiralty stated that the tests were continued over a period of years before final adoption of the apparatus. During this time the personnel was constantly trained with the device, and every effort was made to determine faults, and test for reliability.

The final development resulted in an instrument which was compact, reliable, and extraordinarily accurate. These devices were fitted at each gun, although a later development was arranged with a central firing device for all guns. Krupp does not recommend the installation of the central device to the exclusion of the individual firing devices at each gun.

When the development was completed and tested with the usual thoroughness of the German Navy, they were installed as rapidly as possible. *At the battle of Jutland four battle cruisers were fitted with this device.*

The advantages claimed by the admiralty for the device are as follows:

Accuracy of fire about six times greater than with pointer fire.

Rapidity of fire greater than pointer fire.

Possibility of accurate fire when gun sights are obscured by smoke or spray.

Period of roll does not affect accuracy—device fires at middle of the roll where motion is constant and automatically corrects for the angular velocity of roll.

As nearly as can be determined the device consists of a gyro mounted in such a manner that the sight is supported. The gyro maintains the true horizon. The elevation angle is set on the instrument and fire is automatic when gun rolls through the proper angle. When vessel is in still water, the pointers elevate the muzzle and device fires automatically when proper angle is reached. A special attachment corrects the angle of elevation for the angular velocity

of roll. The details of construction are carefully guarded, as the device is considered the most important development in ordnance in the German Navy.

THE PENDULUM MINE (GERMAN).

Source: Reliable.

(14398.)

6 April, 1921.

The pendulum mine is a free floating mine, moving at a fixed depth in the water. It moves automatically in the water by means of an electrically driven screw at a depth adjusted beforehand. The apparatus driving the screw obtains its current from a battery of accumulators. The water pression registrated on a depth apparatus effects the regulation of the current. The mine floats on its longitudinal axis up and down in the water. It has a sinking capacity of 0.5 k. g., so that when the screw is not turning it goes slowly down. The mine has been constructed and weighted for water of a specific weight of 1.000. Corresponding to the specific weight of the water in the region where the mine is employed, small weights are fixed at the protection of the screw in order to obtain the above-mentioned sinking capacity. Once arrived at the adjusted depth, the depth apparatus enters into the meter (apparatus driving the screw); the mine raises until the depth apparatus again interrupts the current on account of the decreasing water pression, then the mine again sinks, etc. The mine oscillates about the fixed depth, hence the name of pendulum mine. According to the requirements of the various times a clock allows the circuit to be connected or broken off. Moreover the watch works allows the mine to sink definitively on the bottom and to be filled with water after a previous determined time. The mine explodes by collision, by means of which a switch brings the battery of accumulators in connection with the fusee of the mine. By means of a safety installation the mine only becomes effective after it has been layed for a certain time.

Description of the mine and its various parts.—The mine represents a steel cylinder composed of two parts, it has an exterior diameter of 492 mm. and a length of 3 meters.

The principal parts are:

The lower part:

(*a*) The engine with screw and the starter.
(*b*) The safety installation.
(*c*) The air chamber.
(*d*) The depth apparatus.
(*e*) The watchwork.
(*f*) The mercury cut-out.
(*g*) A spy hole.

The lower part:

(*h*) The charge constant for the battery and the lighting installation.

By means of an intermediary bottom these parts are separated from—

(*i*) The battery.

(*k*) The sinking apparatus.

The head:

(*l*) Connection binders for the primer.

(*m*) The charge under shutting petard and the mine fusee.

(*n*) The whip with covering.

(*o*) The installation for the regulation of the weight.

(*p*) The circuit for engine, sinking, and primer.

GERMANY—ORDNANCE.

Source: Reliable.

(13984.)

7 April, 1921.

The naval observer accompanied the representative of the Bureau of Ordnance, Commander W. R. Furlong, United States Navy, to Essen, Germany, for the purpose of inspecting the works and the drawings of certain devices offered by Krupp to the United States.

The firm showed drawings of the German turret mounts in considerable details.

The following interesting features were noted:

The rollers are balls about 5 inches in diameter of hardened steel and accurate to $\frac{1}{100}$ millimeter. These balls roll in a special race so arranged that the balls take on the vertical components of the weight of turret and of the shock. The horizontal component is taken up in the construction of the mount. The plate supporting the roller path is machined in the shop and assembled in the large assembly pits before installation on the vessel. The assembly pits were six in number, 14 meters deep, and arranged so that the entire turret could be assembled in the pit and hoisted out with traveling cranes, the roof of the shop being sufficiently high to permit this being done.

The ammunition cars were hoisted by a hydraulic hoist located in the revolving part of the turret mount, power being supplied electrically. Accumulators maintained the pressure in the hydraulic system. The reserve consisted of electric motors which had one-half the power of the hydraulic system.

The hoists were so arranged that the car could not be hoisted until protective flaps over the loading openings in the ammunition space were closed. The cars were brought up to the loading position and automatically held in this position until unloaded. In case of danger the car could be stopped by the operator in the handling room. The ammunition cars had two cylindrical holes or trays for

holding ammunition. The lower opening holds the shell while the upper one held the two powder charges.

The powder was in brass cartridge cases, the forward charge being of very light metal which burned completely during the combustion of powder. The after case was of heavier brass and fitted with flanges to permit sealing the gases and to permit withdrawal after shot was fired.

The powder and shell were loaded on the loading cars in the turret by means of hydraulic rammers. The cars were then moved over to loading position in rear of breach and the charge loaded in the guns by a second set of hydraulic rammers.

The trainers, pointers, sight setters, turret officers, and range-finder personnel were all stationed forward of the trunnions of the guns.

The sighting hoods were especially designed to keep out fragments of shell and splinters, the general shape being in the form of a megaphone, with concentive rings furnishing sharp projections to prevent penetration of splinters.

The turret train was electric and resulted in a slow even train. Krupp has experimented with an improved Janny-Williams control.

The elevation of the guns is hydraulic. The firm claims to have a special design of the variable speed gear with disk that is absolutely tight and prevents leakage from one side to the other.

The turret is ventilated by means of an exhaust system discharging through the overhang of the turret. One opening of the exhaust system is near the breech of each gun. Another is near the hoist controls and another near the pointers.

GERMANY—POWDER.

Source: Reliable.

(1972.)

13 April, 1921.

The powder for the German Navy was manufactured in the "Deutsche Werke," in the works located at Spandau and other localities in Germany. The buildings in which powder was manufactured and the apparatus have been practically demolished under the terms of the peace treaty and the supervision of the allied control commission.

The following information regarding the process of manufacture was obtained from one of the former directors of the powder works. More details regarding the process are expected and will be reported when obtained.

After the cotton has been cut up very fine, dried and soaked in nitric acid, to which has been added sulphuric acid for the purpose

of absorbing the water, the nitrated cotton is then forced through a wringing process, releasing the acid, and repeatedly washed in hot water. After having been washed, the cotton is triturated into a mealy consistency and repeatedly washed, according to the further requirements of the mixture, until sufficiently cleansed.

The mealy mixture is then completely evaporated, compressed in wooden vats, and stored away. For certain purposes, another cotton, similarly treated, but whose acid mixture is according to another formula, is added to the first cotton. These two cottons are then stirred together in cold water for a longer period, a certain proportion being preserved in the admixture of the two, and then forced through presses to release the water. Like the individual mixtures, the double mixture is stored in vats.

An appropriate apparatus picks up all the cotton particles which have remained in the water after the washings. The water still clinging to the cotton is eliminated in the ether-alcohol process. In this condition, it is mixed very intimately with sulphuric ether in a kneading machine, giving the whole a gelatinous consistency. This gelatinous mass, after being pressed, is then transported away to be further pushed through the presses, emerging in the shape of tubes or stalks (the transporting being done in zinc boxes).

The tubes or stalks are bound most handily together, and then cut into the required lengths or into plaques and sorted out. The little tubes are then assembled together in bundles. To preserve their quality, prevent the collection of dust, etc., the bundles are frequently dipped in certain solutions and then dried. A supplementary washing in cold waters frees the product of the camphorated spirits still adhering, this washing being continued until the final water flows off absolutely clear. To remove the gelatinous stickiness adhering to the interior of the tubes, these (or the kernels) are soaked in cold water which is gradually heated to a certain temperature and then forced out after a fixed period. Whereas the tubes are simply kept drying until required for use, the small plaques are repeatedly graphited, polish, cleansed of dust, and forced through sieves. The products resulting from parallel processes are then combined and thoroughly cleaned of all dust and other foreign particles. The products are in a condition to be shipped after being packed according to certain stipulations.

The sulphuric and nitric acids, the ether and alcohol, used in the processes in large quantities are regained by means of appropriate apparatus and after a certain rehabilitation process returned for utilization to the plant.

The stalks of powder are about 50 centimeters in length for the last charge used in naval guns, and are packed into the brass cartridge case with the long axis parallel the axis of the cases. The tubes have

a control hole equal to about one-half the outside diameter. The powder for the first charge in the case of large-caliber guns are packed into a very thin walled brass cartridge case closed by very thin brass disks at the ends. This thin walled brass case is completely consumed by the combustion of the powder and leaves no residue.

The advantages claimed are more even burning of the powder, thus reducing the dispersion due to powder, and protection of the powder from burning in cases where the flame is of short duration.

GERMANY—TORPEDOES AND TUBES.

Source: Reliable.

(08–340.)

20 April, 1921.

The German destroyers used entirely movable tubes. Each tube had a definite predetermined firing angle (Hauptschuss Richtung) to which the tube was set when in action—but the tubes were also movable so that, in the event an opportunity for the shot was missed, the tube might be set to another angle for firing. The tubes were fitted with a torpedo director developed by Krupp, and equipped with telescopic sights.

Special devices were fitted on the tubes for regulating the speed of the torpedo, depending upon whether the shot was fired at close or long range. No type of collapsible tubes were used with submarines.

Repeated attempts were made in the German Navy to reduce the visibility of the track made by the torpedoes, but no device proved entirely successful. Toward the end of the war several different devices were found to be more or less able to diminish the visibility of air bubbles, but none succeeded in completely eliminating them. The final result was the development of the electric-driven torpedo which was perfected for the submarine 50-centimeter torpedo for 1,500 meters range. The longer range type was not fully developed for the front owing to the ending of the war.

The gyro apparatus (Obry Geer) was operated by air and so arranged that the gyro kept up speed to the end of the run.

JAPAN—NAVY ORDNANCE.

Source: Reliable.

(12899.)

30 March, 1921.

Information has just been received that new machinery for the manufacture of 16 and 18 inch guns has been ordered and is being shipped from England to Muroran, Hokkaido.

Heretofore Muroran has built guns only up to and including 14-inch caliber.

At Hiro (the new extension of the Kure Arsenal) two lathes for turning 18-inch guns are now set up and ready for use.

While it is not yet positively known that 18-inch guns are to be built, it is believed that the decision has already been made to do so.

It is considered probable that the *Amagi*, *Akagi*, *Tosa* and *Kaga* will be armed with 16-inch guns, and that the first vessels that might carry 18-inch will be the *Owari*, *Kii*, *Tokao*, and *Atago*.

CONDITIONS ON SPANISH BATTLESHIP "ESPANA."

Source: Reliable.

(13725.)

12 April, 1921.

The Spanish battleship *Espana* which arrived in Valparaiso November last with the infante of Spain, on the occasion of the celebration of the four hundredth anniversary of the discovery of Magellan Straits, left 10 April, with the infante on board, on the return voyage to Spain. The *Espana* went to Punta Arenas in December and on the return voyage from there, after leaving Puerto Montt, she went aground in the Channel of Chacao. She had on board an officer of experience from the Chilean Navy to assist in navigating the channels. It appears that in passing to the westward through Chacao Channel and when nearly through it a heavy fog came on. The current was running to the westward and very strong. Contrary to the advice of the Chilean officer, the captain decided to anchor, and did anchor before backing his engines. The ship swung around to the current, the anchor dragged, and the ship soon bumped on the rocks, doing serious damage to the hull. From this point on I have never got a clear story of the various occurrences. What I did get, however, was a plain statement concerning the total lack of discipline that was shown and the evident lack of any idea of seamanship. Boats were lowered and swept away by the current; there was no leadership. Aid was sent immediately by the Chilean Navy, a cruiser and all available tugs. Eventually the ship returned to Puerto Montt, where with the aid of Chilean divers temporary repairs were made, and after several weeks the ship went to Talcahuano. There sufficient repairs were made to enable her to return to Spain. I understand that several very large holes were punched in the forward compartments. I have heard several criticisms of the dirty condition that the ship is in, and I am told that a number of Chilean officers went on board to look her over and that the Spaniards were unable to move the turrets.

JAPAN—SUBMARINES.

Source: Reliable.

(6452-C.)

30 March, 1921.

At the Mitsubishi works there were three submarines in the fitting-out basin and three more on the ways well advanced in construction. They are all of the large type.

Those in the fitting-out basin were probably *Nos. 27*, *28*, and *29*, while those on the ways must have been *No. 30* and two others not previously referred to by number, but which will, until definite information regarding their designation is received, be referred to as *Nos. 44* and *45*.

The bows of the submarine on the ways could not be seen, therefore the location of torpedo tubes is not known. However, a good side view was obtained, for three-fourths of their length from astern, and there were no outward openings suitable for mine laying.

At the Kawasaki works there was one small submarine fitting out alongside a pier and two others on the ways, red-leaded, and about ready for launching. The two on the ways appeared to be somewhat larger than the one in the water, but it is not positively known that they were. They were, however, smaller than those building at Mitsubishi. It is reasonable to believe that these submarines were *Nos. 31*, *32*, and *33* that have been held up so long pending alterations. They are the Italian type of slightly over 700 tons surface displacement.

Although no information has been received of placing submarines *Nos. 1* to *5* out of commission, yet it has just been learned that the German submarines, received as war prizes, have been renumbered *1* to *7* inclusive. It has also been stated that the navy department has on several occasions rearranged the numbering of new submarines (one boat having had as high as three different numbers), and it is now believed that the intention is to designate submarines along the following lines, namely: *20*, *20–A*, *20–B*, etc., *21*, *21–A*, *21–B*, etc.

This shifting of numbers might have accounted for some of the extreme difficulty experienced in locating and keeping track of submarines. Submarines *Nos. 42* and *43* built at Sasebo were completed about 1 November, 1920. They are reported to have Sulzer engines instead of Vickers.

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FOR CONVENIENCE IN ROUTING.

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Executive Officer			
First Lieutenant			
Navigating Officer			
Gunnery Officer			
Communication Officer			
Engineer Officer			
Medical Officer			
Supply Officer			
First Division Officer			
Second Division Officer			
Third Division Officer			
Fourth Division Officer			
Fifth Division Officer			
Marine Officer			

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ACTIVITIES OF ZEPPELIN COMPANY IN THE UNITED STATES.

Source: Reliable.

(14189.)

2 May, 1921.

Mr. Harry Vissering, 14 East Jackson Boulevard, Chicago, Ill., has visited the bureau a number of times to talk about rigid airships, and has intimated that he has been retained by the Zeppelin Co. of Germany to organize the promotion of a company in the United States to operate Zeppelin airships commercially. He appears to have been collecting information preparatory to presenting a proposition to various financial interests whom he hopes to convince of the practicability of such a venture. In the meantime, it is understood Mr. Vissering has made an arrangement with Howard Rhinehart, of Dayton, Ohio, formerly test pilot for the Dayton Wright Airplane Co., to act as sales agent for the Zeppelin Co.'s metal flying boats in the United States.

On 29 April Mr. Vissering arrived in Washington from Chicago, Akron, and Detroit, accompanied by Capt. Lehmann and Capt. Fleming, both Zeppelin pilots sent to the United States to assist Mr. Vissering in preparing his proposition. They had been to Detroit to attempt to interest Ford and other Detroit capitalists, and to Akron, where they had seen Mr. Seiberling, president of the Goodyear Tire & Rubber Co. Capts. Fleming and Lehmann are studying meteorological conditions for an air service between New York and Chicago, and are in Washington to consult the United States Weather Bureau for meteorological data. Upon completion of this work in Washington, they plan to go to the Blue Hill Observatory of Harvard University to find what can be learned as to conditions in the upper air at that place.

The following information was obtained in the course of conversation and can not be verified at this time:

Capt. Lehmann was formerly a naval constructor in the German Navy, but resigned to go with the Zeppelin Co., later becoming a pilot of Zeppelin airships. He was pilot of *L–72* and had all arrangements made last year to fly *L–72* across the Atlantic, over the city of New York, and back to Germany without stopping before delivering this vessel to the French in accordance with the armistice terms. He received permission from his company to make this flight without knowledge of the German Government or of the allied aeronautic commission of control, but at the last minute was refused

such permission because the Zeppelin Co. feared that the Allies would order the destruction of the Zeppelin sheds at Friedrichshafen as reprisal for the unauthorized flight. I know of my own knowledge, and was not told by Capt. Lehmann, that since the armistice Lehmann has been used by the company on various missions to promote subsidiary enterprises in neutral countries. He attempted to organize a service of Zeppelin flying boats in Switzerland, but without success, and in August, 1920, went to Sweden, presumably in connection with a similar project which has not resulted in anything tangible.

Capt. Fleming was a war pilot of Zeppelins, was frequently over England on bombing raids, and was employed by the Zeppelin Co. to deliver Zeppelin airships to Italy in accordance with peace treaty conditions.

Capt. Lehmann stated that the Zeppelin Co.'s works at Friedrichshafen were unable to do any construction because of allied rulings, but were permitted to build a few metal flying boats of a commercial design. The aeroplane building plant at Staaken has been closed down because the metal aeroplane built there became involved in question before the allied commission and also there appeared to be no commercial market for them. It is the Zeppelin Co.'s present position that the immediate commercial future for aircraft lies in the metal flying boat, and that they do not care to exploit the land airplane.

Capt. Fleming appeared to be much interested in recent newspaper reports of the successful developments in England of the mooring masts for the rigid airships, but was of the opinion that such a mooring mast, while useful as an emergency, was not suitable for the commercial company to use because of extra depreciation of the airship, but mainly because of the additional weight in the nose of the ship necessary to strengthen it so that it can swing to a mast, which weight must always be carried in the ship and hence be subtracted from the paying load.

The Zeppelin Co.'s proposals with regard to the promotion of an airship concern in the United States involve the supply of technical assistants to an American corporation in which the Zeppelin Co. will receive a certain stock interest in return for their services. For this reason the Zeppelin Co. will be interested in the financial success of the American company in order that they may profit from dividends received. The immediate return of the Zeppelin Co. will come from the construction in Germany of the airships to be used by the American corporation, to which they will be delivered by air. The Zeppelin Co. will also supply the designs for hangars, which they will be paid for, but the hangars would be built by an American

company. Mr. Vissering stated that the Zeppelin Co. proposed that an American corporation should erect a rotating shed near New York and one near Chicago in accordance with designs which he had received. These designs had been submitted to the American Bridge Co., who have pronounced them feasible, and offered to undertake the construction, above the foundations, for $2,000,000.

Capt. Lehmann expressed great anxiety as to whether *R–38* would make a successful passage from England to the United States. He said he had at one time very great respect for the British airship personnel's competence and initiative because they had been able to construct Zeppelin type airships, starting very much later than the Germans. More recently, however, he had changed this opinion so far as it affected the British operating personnel, and he believed that British practices in operation, and especially navigation and control of the airships, was extremely reckless. He expressed fears as to whether the American crew were trained to operate in accordance with British practices and was especially anxious to inquire as to the arrangements the United States Navy would make with regard to a meteorological service for the transatlantic flight of *R–38*. He said he was vitally interested, for in case of an accident to *R–38* on the trans-Atlantic flight it would be quite impossible for the Zeppelin Co. to establish a commercial airship line in the United States, at least for several years to come. When asked what suggestions he wished to make with regard to the *R–38* passage he replied substantially as follows:

That he hoped the American crew would be given at the time of their start full and complete information as to whether conditions over eastern and central Canada and northern United States, as well as for Newfoundland and in the North Atlantic; that on the basis of such information at least two alternative courses be laid out, one northerly and southerly and one intermediate, and that 24 hours after starting additional information by radio should be got to the ship by every possible means, which would give the commanding officer evidence as to the movement of centers of disturbance would incline him to change, if necessary, from the course originally decided on as the most feasible.

Capts. Lehmann and Fleming volunteered to answer questions with regard to the reasons for certain features of design incorporated in Zeppelin airships and later criticized certain plans of *ZR–1*, which were shown them.

JAPAN; AVIATION.

Source: Reliable.

(3439.)

16 April, 1921.

Japan has not built a single successful, modern, high-powered aeroplane engine in four years, although she has been at it industriously since 1916.

Japan has found French and Italians unsatisfactory as instructors; both French and Italians are too impatient and too critical of the Japanese slowness to learn and to apply what they have learned.

BRITISH HELICOPTER—BRENNAN'S.

Source: Reliable.

(6504.)

May 6, 1921.

The following extract from the London Daily Express describes the precautions taken by the Government to prevent any leakage of information on the above subject:

Trials will shortly take place at Farnborough of the Brennan helicopter, a development of the aeroplane, possessing the power of rising vertically from the ground and hovering over any given point.

The value of such a machine in warfare is obvious, but from the commercial point of view its advantages are incalculable.

With the helicopter, an air station, say, in Piccadilly Circus, would be quite possible, for machines departing for and arriving from the Continent could rise or alight comfortably on an average-sized flat roof.

A helicopter of totally different design has recently been tried experimentally in France, but the British Government consider the Brennan machine far superior, and the most extraordinary precautions have been taken to prevent the leakage of any information regarding the design. Every person concerned has had to take an oath of secrecy.

The various parts have been made in different workshops and by separate staffs of mechanics, and the mechanics engaged on the work of assembling at Farnborough are confined to barracks, while the factory and aerodrome are completely surrounded by military guards.

The whole business resembles the secrets of the tanks guarded in 1915 near Thetford.

JAPAN; AVIATION.

24 May, 1921.

The following is the gist of a report of a conversation with Colonel, the Master of Sempill:

He is leaving for Japan June 11, 1921. His staff consists of 30 men, including himself. Maj. Brackley and Maj. Fowler, both formerly with H. P., two of the oldest and ablest British pilots, have already gone to Japan and about half the others have already gone. The staff consist of flying instructors, engineer officer, gunnery officer, technical officer, photographic officer, radio and instrument ex-

perts, mechanics, riggers, etc., all civilians, practically all ex-officer, warrant officers, and N. C. O.'s of the Royal Naval Air Service and the Royal Air Force. No one of these men has any present relations with the air ministry or the Royal Air Force. Col. Sempill was deputy director of technical section, bureau of aircraft production, air ministry, but resigned in 1919, and has no further intimate connection with the air ministry. He is a member of the council of the Royal Aeronautical Society for 1921. The mission is fully civilian and is entirely concerned with the Japanese Admiralty; no connection with the Japanese Army. The Japanese Government asked about a year ago for an official mission to be sent by the air ministry, which was refused. The Japanese Government has always had recourse to British sources for naval information and has based the Japanese Navy largely on British practice. Many Japanese war vessels have been built in England. It is natural, therefore, that the Japanese Admiralty should go to the British for naval aviation. The Japanese Army has probably progressed further in aviation up to the present time than the Japanese Admiralty, but all their present army projects are based on French practice, and practically all machines and engines were purchased from the French Government and made after French designs. This is primarily due to the fact that the French were the first to send a military aero mission to Japan. The head of this was Commandant Flurry. This mission sowed the seeds of French ideas and influenced the Japanese Army to confine itself to French material. The members of the French mission have now practically all returned to France with the exception of one or two flying instructors. The amount of aviation material acquired from the French and the rights to construct more machines in Japan from French designs are considerable, but the details do not seem to be available.

The Sempill mission is primarily for purposes of instruction and training the embryo Japanese Naval Air Service. Sempill expects to remain in Japan for at least a year and probably longer. The present status of the Japanese Naval Air Service is about that of the British Naval Air Service in 1914. The opportunity for development, owing to geographical conditions, is considerable and considered highly promising, but at the present time little exists in the way of aerodromes, seaplane stations, sheds, etc. The general impression is that the Japanese do not make good pilots. The training of skilled engine mechanics and riggers is also expected to be tedious.

Flying material acquired by Japan in England since the armistice is believed to be about as follows:

Forty-eight Avros type 504 K.—These will be used for training purposes and will all be equipped with dual control. A certain part of

them, but not all, will be fitted with dual seaplane floats. This contract is now being constructed at the Avro Works (A. V. Roe & Co. (Ltd.)), at Hamble, Hampshire, and will be shipped over to Japan as completed. The contract includes the Japanese rights for the Avro, and it is presumed that further machines of this type as required will be constructed in Japan to standard Avro specifications. A number of Japanese are now at the Avro Works studying the construction of these machines.

Twelve Parnall "Panthers," with B. R. 2 rotary engines.—This type of ship seaplane with wheel landing gear, paravane, and inflatable floatation bags is a useful machine, although now considered obsolescent. This order is being constructed for George Parnall & Co. (Ltd.), by the Bristol Aeroplane Co.

Eight "F–5" flying boats with two modified low-compression Rolls-Royce Eagle Eight engines each, constructed by Messrs. Short Bros.—The construction of these was completed at Messrs. Short Bros. Works, and they have been shipped to Japan. Six others, which had been partially constructed, were shipped to Japan in pieces and construction will be completed there. Mr. Oswald Short and a number of workmen have already gone to Japan, and will complete there the construction and assembly of these boats. While there they will doubtless endeavor to obtain further contracts. It is believed that at the present time no further contracts have been concluded. The *F–5* boat is not highly thought of and is obsolescent, if not practically obsolete. It is of no great value except for training purposes, as it takes too long to get off the water with anything like a full load. This, of course, has a serious effect on the depreciation of the engines, which must be opened full out for a considerable time while the boat is taking off, unless it is so little loaded as to have no considerable useful load or range.

Fifty Nieuport "Sparrow-Hawks" with 200-horsepower B. R. 2-rotary engine.—This order is being constructed in England and has not yet been dispatched. It constitutes the only modern type of aircraft which the Japanese acquired in Great Britain up to the present time. The *Sparrow-Hawk* is the Nieuport *Nighthawk* slightly modified as to engine mounting, to take the 200-horsepower B. R. 2-rotary engine instead of the 350-horsepower A. B. C. "Dragonfly" radial engine. There is, of course, a considerable loss in performance of the Dragonfly *Nighthawk*, but a notable gain in engine reliability. This type of machine is a single-seater pursuit plane. Some of them will be equipped as such, some are being constructed with two seats and dual controls for training purposes, and some are being equipped with paravanes and inflatable floatations gear for taking off from turrets of capital ships and from mother ships or aircraft carriers. The Japanese Navy is said to have one mother ship at the

present time, but it is believed that some aircraft carriers are under construction.

A certain number of 100-horsepower Gnome Mone-Soupape, 110-horsepower Le Rhone, 130-horsepower Clerget, 200-horsepower B. R. 2, and Rolls-Royce Eagle VIII aero engines, and spare parts and accessories thereof, together with aero instruments, propellers, fittings, and other accessories, have been acquired from the Aircraft Disposal Co.

Twelve Sopwith "Cuckoo" torpedo planes, fitted with 200-horsepower Wolesley-Hispano "Viper" engines.—Standard British torpedo-carrying planes, but obsolescent, purchased from Aircraft Disposal Co. (Ltd.), together with spares.

JAPANESE ACTIVITIES IN ENGLAND (AVIATION).

Source: Reliable.

(14396.)

May 5, 1921.

At Bursledon and Hamble, in the suburbs of Southampton, is situate the Avro Aeroplane Co.'s works. The Avro Co. is owned by A. V. Roe, the name of the company being a play upon his name, A-v-r-o. The manager of the company is a man named Parrott. Up to a short time ago the shops of this company were practically idle, and it was rumored they were about to close down. They have recently secured a large contract from the Japanese Government for the manufacture of aeroplanes. The type of machine heretofore manufactured by this company has been one used almost exclusively for instructional work. Whether there has been any variation in this type involved in the new contract is not known at present. The contract must be an extensive one, because a large number of men are now employed at the works and some 30 Japanese are at the works taking part in the construction and receiving instruction in the various departments of the factory. All the work is carried on under the supervision of four Japanese naval officers, the senior officer being a captain and the second a lieutenant in the Japanese Navy. These four officers live at the Polygon Hotel, and every morning they come into Southampton in a car, apparently owned or chartered by them, driven by an English chauffeur. They circulate freely in Southampton, spending considerable time at the yacht club, and they have gone more or less into Southampton society. They have become acquainted with nearly all leading officials, including port officials, the police officials, the American consul, and others. It is known that they have taken great interest in the harbor works and defenses of Southampton, and they have at every opportunity familiarized themselves with every feature of the port. It may be

possible shortly to get some definite information as to the nature of the contract held by the Avro Co. from the Japanese Government, but that it is one of considerable importance is evident from the number of English workmen engaged and the number of Japanese who are attached for instruction.

Certain responsible men in Southampton, who are in a position to secure further information, have agreed to use every effort to do so, and results, if any, will be reported later. Some knowledge of the contract exists among the flying people in London, and it is possible that some information concerning it may be secured later on through British sources.

The Japanese workmen stationed at Bursledon are very closely horded together and do not circulate much in the town. It is only the four officers mentioned who are seen anywhere about. They are very well dressed and are very lavish in their expenditure, being seemingly well provided with entertainment funds.

Mr. Savage, the American consul at Southampton, informed the writer that he had for some time been intending to get details concerning the contract with the Avro Co.; that when he did get these details he would make a report which would go to the consul general at London and a copy to the American Embassy in London, in which case it is presumed the embassy copy would, in time, reach the air attaché, who is attached to the office of the military attaché at the American Embassy.

JAPAN—NAVAL AVIATION.

Source: Reliable.

(9318–H.)

6 May, 1921.

The status of the 15 naval aerial corps reported in reference (*a*) is stated to be as follows: The corps at Yokosuka and Sasebo completed, those at Kure to be completed in the near future, and that of Maidzuru to be completed by 1923. This must refer to the grounds, sheds, hangars, etc., as it is manifestly impossible for Japan, with her past facilities, to have trained sufficient officers in six months to bring the flying personnel up to practically full strength. In addition, the navy has not the required number of serviceable planes to fully equip 14 corps.

New regulations governing the promotion of naval aviation officers are now being drawn up. This is unquestionably being done in an attempt to popularize the aviation service.

The 30 British aviators reported to be in Japan in reference (*b*) was about correct, although the exact number has never been learned. The men, however, are not giving actual flying instructions, but are acting as supervisors at various airplane factories and aviation fields.

On April 16 four retired British aviators arrived in Japan. Twenty more are scheduled to sail from England in the very near future, and it is stated on reliable authority that about 50 more will leave England some time in the fall.

The above 20 aviators, headed by Lieut. Commander Dodd and Lieut. Ellis, arrived at Kobe on the 23d of April. They were sent by the Shortt Aeroplane Co. This will make a total of about 100 British instructors and construction experts.

The four aviators who arrived April 16 and the 20 who arrived at Kobe April 23 are to be stationed principally at Kasumigaura, and some few possibly at Oppama. Those who are expected in the fall, it is stated, will be stationed principally at Sasebo.

The report covered by reference (*c*), that all capital ships are to be equipped with airplane launching tracks, has been confirmed. In addition, all ships, including light cruisers (5,500 tons) and above, are to carry planes.

During the present year, 1921, two battle cruisers of the *Kongo* class and one light cruiser, *Kuma* class (5,500 tons), are to be equipped with planes.

In general, the aviation activities in Japan, especially naval, are more than feverish; they have all the appearances of desperation.

JAPAN—NAVY AVIATION—SEAPLANES.

Source: Reliable.

(9318–H.)

6 May, 1921.

The trial of the largest hydro-aeroplane built in Japan took place on April 21, 1921, from the naval aviation station at Yokosuka; the estimated speed was 120 miles per hour, and the trial was carried out very successfully.

It is not known what type of plane this is, but it is not the *F–5* type, reported in above reference, as this plane has not yet been assembled. The *F–5* plane is of following specifications: Wing spread, 110 feet; body length, 50 feet; engines, two 350-horsepower each; speed, 80 miles per hour; endurance, 10 hours; capacity, 6 persons. It also carries torpedoes, bombs, and machine guns.

JAPANESE FIRST-CLASS CRUISERS.

Source: Reliable.

(14524.)

6 May, 1921.

From a translation of naval statistics in the February issue of the Japanese magazine Dai Nippon it is learned that four first-class cruisers were authorized prior to 1 January, 1921. These four cruisers have not previously been reported by this office and are in addition to all 5,500-ton cruisers reported as built, building, or authorized.

Reference has recently been made in the press on several occasions to 7,000-ton cruisers, so it is possible that this will be about the displacement of these vessels.

VESSEL CONSTRUCTION—SUMMARY.

Source: Reliable.

30 April, 1921.

On May 1 there were reported 942 ships in the navy, of which 766 were in commission, 74 out of commission, 83 under construction, and 19 authorized but not yet placed. This does not include vessels on the sale list of the Neff submarine authorized but not placed.

Capital Ships.

The following table shows the status of the battleship building program:

Contractor.	Under contract, uncompleted.	Launched.	On ways.
New York Navy Yard	2		2
Mare Island Navy Yard	2	1	1
Newport News Shipbuilding & Dry Dock Co	3	1	2
New York Shipbuilding Corporation	2	1	1
Norfolk Navy Yard	1		1
Fore River Shipbuilding Corporation	1		1
Total	11	3	8

Some progress is shown on the hulls of all six battle cruisers under construction and on the machinery for four of them. The machinery for battle cruisers *Constitution* and *United States* is awaiting detail plans.

Light Cruisers and Gunboats.

The light-cruiser program remained the same April 30 as reported on March 31, there being 10 under contract, of which 2 were launched and 8 reported on ways. According to prediction, light cruiser *No. 6* will be launched May 23, and *No. 9* on July 15.

The 1 gunboat under contract was reported on ways April 30. It is probable that this gunboat will be launched in June.

Destroyers and Submarines.

The following table shows the current program on April 30:

Type.	Authorized but not contracted for.	Total number under current contracts.	Under construction.				Completed.	
			Total.	Launched.	On ways.	Keel not laid.	To date.	During April.
Destroyers	12	269	8	6	2	.....	261	7
Submarines	.....	104	37	21	16	.....	67	.....
Fleet submarines	6	6	4	1	.....	3	2	.....

Submarine *No. 161* will probably be launched on June 18.

Auxiliaries.

One Neff submarine and one transport were reported April 30 as authorized but not contracted for.

The following table shows the program for other auxiliaries on April 30, 1921:

Type.	Under construction.		
	Total.	Launched.	On ways.
Aircraft tenders	1	1	.....
Submarine tenders	1	.....	1
Destroyer tenders	2	.....	2
Repair ships	1	.....	1
Fuel ships	1	1	.....
Ammunition ships [1]	.....	.....	.....

[1] The 1 ammunition ship under construction was delivered during April, thus completing the program for this type ship.

Battleship and Battle Cruiser Progress Report.

	Percentage of completion of—			
	Hull.[1]		Machinery.	
	Apr. 30.	Mar. 31.	Apr. 30.	May 31.
Battleships:				
California	96.5	96.1	95.2	94.3
Colorado	71.3	69.3	79.0	77.8
Maryland	98.3	96.8	98.0	97.0
Washington	63.1	61.2	68.7	67.7
West Virginia	52.1	49.5	59.0	58.0
South Dakota	29.1	26.7	27.3	23.7
Indiana	25.8	23.1	12.5	11.1
Montana	22.1	18.0	.....	.....
North Carolina	29.4	27.4	.....	.....
Iowa	19.3	16.1	20.0	15.0
Massachusetts	[1] 3.0	2.5	4.5	3.5
Battle Cruisers:				
Lexington	16.6	13.8	6.0	5.0
Constellation	9.3	7.9	12.0	11.0
Saratoga	20.4	18.1	4.5	4.0
Ranger	1.6	1.2	4.9	2.5
Constitution	6.0	4.3	.....	.....
United States	6.0	4.3	.....	.....

[1] This percentage includes actual work done on the ship plus the percentage of material actually delivered for the ship.

The following table presents the percentage of progress on hulls and machinery for light cruisers:

Progress Report for Light Cruisers.[1]

Type.	Percentage of completion of—			
	Hull.		Machinery.	
	Apr. 30.	Mar. 31.	Apr. 30.	May 31.
Light Cruisers:				
No. 4—Omaha	91.4	90.0	70.9	68.5
No. 5—Milwaukee	88.3	84.7	64.2	61.9
No. 6—Cincinnati	80.6	80.6	61.9	59.0
No. 7—Raleigh	53.8	51.4	34.0	32.0
No. 8—Detroit	53.6	51.2	34.0	32.0
No. 9—Richmond	64.0	62.0	61.0	60.0
No. 10—Concord	62.0	60.0	57.0	56.0
No. 11—Trenton	44.0	41.0	44.0	43.0
No. 12—Marblehead	42.0	39.0	39.0	38.0
No. 13—Memphis	35.0	32.0	36.0	35.0

[1] This percentage includes actual work done on the ship, plus the percentage of material actually delivered for the ship.

THE EX-GERMAN BATTLESHIP "BADEN."

Source: S. V. Goodall, Esq., M. B. E., R. C. N. C. (Member).

[Read at the spring meetings of the sixty-second session of the Institution of Naval Architects, Mar. 16, 1921.]

(12844.)

The ex-German battleship *Baden* was provided for in the 1913–14 programme. Her keel was laid on December 20, 1913, at the yard of F. Schichau, Danzig; she was launched on October 30, 1915; commissioned on October 19, 1916; and commenced her trials on November 5, 1916. The ship is therefore particularly interesting for several reasons. The main features indicate the latest German ideas on battleship design, for the vessels building when the armistice was signed are almost identical. Moreover, since the battle of Jutland was fought before the ship was completed, the lessons learned from real fighting should be apparent in details, any weak features revealed by this experience should be indicated by alterations and additions of a somewhat patchwork nature, while the entire absence of such changes leads to the conclusion that the German Admiralty contemplated no more fleet actions.

Plate II shows the general feature of the ship. Attention is directed to the four continuous longitudinal bulkheads. These, in conjunction with the numerous transverse bulkheads, give a first impression that water-tight subdivision is very complete, but further consideration should lead to a modification of this opinion. The submerged torpedo room is a very large compartment and is adjacent to another, the after 15-inch shell room. When the ship was completed there was a similar torpedo room immediately forward of the foremost 15-inch shell room. A drawing was found

on board showing damage to this portion of the ship, evidently caused by a mine. It is significant that when the ship was repaired this space was not fitted up as a torpedo room but was divided up into several compartments. The thick longitudinal bulkheads forming the outer boundaries of the boilers are necessarily provided with doors for transport of coal.

For the same reason all the transverse bunker bulkheads but one are fitted with doors. Of the 17 transverse bulkheads in the water-tight compartments next to the ship's side, 10 are provided with doors for access. Further, there is a door between the two forward 15-inch shell rooms and similarly aft; each of the three forward engine rooms is in communication with the engine room immediately abaft through doors in the transverse bulkhead, and the longitudinal bulkheads between boiler rooms are similarly pierced. Moreover, voice pipes are largely used for communication between compartments; these have been led through decks and bulkheads without much regard to water-tight integrity, and although those below the low-water line are fitted with valves, experience in salving showed to what an extent they impair water-tightness. Numerous sluice valves, suction pipes, and ventilation trunks also reduce the efficiency of the water-tight bulkheads.

Armament.

Heavy guns.—The arrangement of the four turrets, which carry eight 15-inch 45-caliber guns, is shown in Plate II. The following are the leading particulars of these guns and mountings:

Height of turret guns above low water line.—A turret, 28 feet 6 inches; B turret, 38 feet 11 inches; X turret, 31 feet 5 inches; Y turret, 21 feet 1 inch; length, 45 feet 2 inches.

Dimensions of gun shield.—29 feet 4 inches, maximum width; depth, 9 feet 3 inches.

Internal diameter of barbette armor		29 feet 2 inches.
Diameter of roller path		12 feet 4 inches.
Distance between guns		1,020 tons.
Approximate estimated revolving weight		76.2 tons.
Weight of gun		16°.
Maximum angle of elevation		2,625 foot-seconds.
Muzzle velocity		22,200 yards.
Corresponding range		8°.
Maximum angle of depression		$2\frac{1}{2}$°.
Fixed loading at elevation		1,653 pounds.
Weight of shell		
Weight of charge: (*a*) Forward	Propellant	212 pounds.
	Silk case	6.6 pounds.
(*b*) Rear with primer	Propellant	192 pounds.
	Brass case	131 pounds.
Rounds per gun carried (normal condition)	A. P. C.	60.
	H. E.	30.

Length of shell	A. P. C.	3.5 calibers.
	H. E.	4.1 calibers.
Weight of burster	A. P. C.	51.9 pounds.
	H. E.	148 pounds.
Length of range finder in each turret		26.9 feet.
Estimated interval between roounds, rapid firing		26–50 seconds.[1]
Angle of heel at which turret could no longer be worked		12°.

Structural Fittings.

The good quality of the castings and the care with which they have been designed to economize weight without sacrificing strength are very noticeable.

Double-hinged water-tight doors are fitted to casemates and such like positions where they are likely to be subjected to blast.

Hinged water-tight doors are generally narrow; those above the low-water line are provided with six clips, three on each side, so connected that all three can be worked by one handle. The bulkheads at the doorways are fitted with elaborate compensation.

Sliding sheet-steel doors are generally fitted to cabins. They work very easily.

Armored hatch covers are fitted with a crude spring arrangement to assist in opening.

Such fittings as water-tight doors, guard-rail stanchions, side lights, hatch covers, and cabin doors are lighter than in the British service. The electroturbo pumps have sea connections for flooding. The magazines on the lower deck and the 5.9-inch magazines amidships are flooded by pumping from the neighboring electric turbo pumps into the sprinkling pipes.

The flooding magazines, when in dry-dock, arrangements are provided whereby adjacent wing compartments are filled before docking with about 400 tons of water, which can be pumped into the endangered compartments.

The usual sounding and air-escape pipes are provided.

Organization for dealing with underwater damage.—In action it is the commander's duty to keep the ship safe and reasonably upright. For this purpose a central control position is arranged in the lower conning tower, from which the officer in charge can communicate by voice pipe or telephone with the pumps, working positions of certain seacocks, and auxiliary leak-control stations. In this central-control position are fitted a pendulum to indicate actual heel and trim and a board showing the weight of water which each compartment can contain, and the effect of this contained water on the draft, heel, and trim of the ship. The board is provided with colored pegs to mark the actual state of the vessel.

[1] The lower limit is the time taken when shell and charge are waiting at the top of the hoist in the gun house; the upper limit is the time taken when they have to be transported from remote positions in the shell room and magazine.

The commander has full authority to take action and is only required to consult the captain if the fighting value or buoyancy of the ship is considerably prejudiced.

The whole of the ship's company is thoroughly drilled in this work and carefully instructed regarding the water-tight subdivision and the pumping, flooding, and draining arrangements. A model evidently used for this purpose was found on board.

DIESEL MOTORS (GERMAN).

Source: Reliable.

(13947–C.)

6 April, 1921.

The principal firm building Diesel motors for use in submarine vessels during the war was the Maschinefabrik Augsburg-Nurnberg, at Augsburg. This plant is said to have turned out approximately 60 per cent of all submarine motors built in Germany up to 1,200 horsepower, 80 per cent up to 1,750 horsepower, and about 90 per cent of the 1,750 horsepower, and the 3,000 horsepower types. Construction of the two largest units (6-cylinder machines, known as Type S 6V 35/53, and 10-cylinder machines, known as Type S 10 V 53/53, developing the indicated horse-power at 380 r. p. m.) was not begun until the last year of the war and most of these large machines were not completed until 1919 and 1920. It was these latest model Diesel motors, embodying all the improvements suggested by the submarine experience of the Germans during the war, that were the subject of my special inquiry.

By May, 1920, large high-speed Diesel motors are said to have been built in Germany as follows:

Firm.	3,000 horse-power machines.	1,750 horse-power machines.
Maschinefabrik Augsburg-Nurnberg, Augsburg	44	20
Blohm & Voss Werft, Hamburg	4	2
Vulcan Werke, Hamburg	2	2
Körting Gebrüder, Körtingsdorff, Hanover		2
Total	50	26

Of the 44 machines of 3,000 horsepower built by the Augsburg-Nurnberg Co., there were delivered to—

England (ultimate destination unknown)	18
Blohm & Voss Werft, Hamburg	10
Elmag (a sales organization formed by German electrical interests)	10
Ueberlandzentrale, Groba	3
Elektrizitatswerke, Egeenfelden	1
"Excelsior" Gummiwerke, Hanover	1
Baumwollspinnerei Stadtbach, Augsburg	1
Total	44

The Blohm & Voss Werft, Hamburg, in addition to the 10 machines received from the Augsburg-Nurnberg Co., built four machines in their own plant at Hamburg and received two more machines from the Vulcan Werke, Hamburg, making a total of 16 machines of 3,000 horsepower. Of this number, six machines are known to have been sold by Blohm & Voss to the Japanese Government, and Japanese warships are said to have come to the Hamburg wharves of the Blohm & Voss Co. to remove these machines. This delivery is said to have been made about December, 1919. The remaining 10 machines in the hands of Blohm & Voss are supposed to have been converted to merchant-ship use and have either been actually installed in such vessels or are being held in their yards to be installed in such hulls.

It is not thought by my informants that Japan purchased any other Diesel motors in Germany for submarine use except those mentioned above. They base their opinion upon two grounds—first, that Japan was known to be in the market only for the latest model machines, in this case the 1,750 horsepower and 3,000 horsepower units; second, that Japanese naval officers came to Augsburg to endeavor to secure plans and detail drawings of these two models only. I am informed that the Augsburg-Nurnberg Co. refused to furnish such plans and drawings and to supply the technical staff necessary to install and operate these machines in Japanese vessels unless Japan purchased a construction license. It is said that the Japanese refused to do this.

Of the 18 machines of 3,000 horsepower delivered to England, no information as to the ultimate destination was available, but it is of course possible that some of these machines also found their way into Japanese hands. Of the 10 machines delivered to Elmag it is known that six or eight went to Spain and the balance to Holland. It is also possible that Japan acquired some of these, but no definite information was available.

Of the 26 machines of 1,750 horsepower listed above, there were delivered to—

England (ultimate destination not known)	12
Berg-Inspection, Claustal	1
Continental Gummi, Hanover	1
Sachsische Webstuhlfab, Chemnitz	1
Elektrizitatswerke, Enzberg	1
Elektrizitatswerke, Freiburg	1
Buntweberei Riedinger, Augsburg	1
M. A. N. Zentrale, Augsburg	1
Unknown deliveries	6
Total	26

It is possible that some of the 12 machines delivered to England as well as some of the six machines (built by Blohm & Voss, Vulcan

Werke, and Körting Bros.) went to Japan. No definite information was obtainable.

In addition to the four firms named above, there were also Diesel motors suitable for submarines, and used for this purpose, built during 1919 and 1920 by Krupp's Germania werft, Kiel; Weser A/G, Bremen; Daimler A/G, Marienfeld, Berlin; Benz A/G, Mannheim; Algemeine Elektrizitatgesellschaft, Berlin.

The Krupp and Werser firms are said to have been unsuccessful in building large Diesel motor units and that no actual deliveries of these machines were made. Daimler and Benz built considerable numbers of smaller units (up to 1,200 horsepower). The Algemeine Elektrizitatgesellschaft, Berlin, built a number of 550-horsepower machines during 1918 and 1919, and the merchant submarine *Deutschland* is said to have been driven by two 550-horsepower machines. These motors were, of course, all built for the German Government, and consequently no information as to destination of the smaller units could be obtained.

As late as May, 1920, there were on hand at the Augsburg plant of the Augsburg-Nurnberg Co. about 65 machines of various sizes, all of which were built for submarine use. This entire lot, among which there were some 3,000-horsepower and 1,750-horsepower machines, is said to have been offered to the American Government through a certain Dr. Bach, formerly of the German Reichsverwaltungsamt, but not then connected with this office, and a well-known American Army officer. The price of these machines was at that time equivalent to $6,500,000, to which price 25 per cent was added as commission. These machines were subsequently sold to Elmag, Oelmag (a sales organization formed by German oil-engine manufacturers other than M. A. N.), and to a Spanish-Dutch syndicate. The latter syndicate shipped a number of units to Holland, where two individuals named Riedinger and Zoudthout are said to be offering the smaller units for sale. The large units were sold to Spain by Elmag, as stated above.

It appears that none of the latest models of Diesel motors found their way to Switzerland, although it is possible that some of the smaller units may have been shipped to or through this country. No definite information could be obtained.

DIESEL ENGINE CONSTRUCTION.

Source: Reliable.

(13947–D.)

June 1, 1921.

From the concerns involved it is learned that negotiations are now under way through the firm of Hallgarten & Co., of 5 Nassau Street, New York City, for the consolidation of interests of the Germania

Works in Kiel and the Maschin Fabrik Augsburg-Nuremburg with the Submarine Boat Co. of America (electric boat) for the construction of Diesel engines in the United States.

This arrangement permits the American company to obtain licenses, drawings, and engineering experience for the manufacture of thin-walled steel castings required in the design of these engines. This will include also the Steinbecker patents (owned now by Germania Werft), the development in solid injection, and the laboratory research made on fuel oils under conditions obtaining during combustion in the cylinder. The American concern brings a certain amount of capital into the corporation and agrees to a complete exchange of engineering experience.

It is understood that possibly J. P. Morgan & Co. may assist in the financing of the proposed consolidation.

GERMANY, ENGINEERING.

Source: Reliable.

(10361.)

18 April, 1921.

The naval observer witnessed tests on a new synthetic fuel developed in Germany for the purpose of obtaining cheaper power. The mixture is kept a secret, since the patents have not yet been granted in the various countries, including the United States.

The fuel is said to be a mixture of heavy oil, benzol, and water, about 60 per cent being benzol. The price of the mixture is about 50 per cent of benzine.

The tests were conducted on an Opel motor—4 cylinder, rated at 24 horsepower at 2,000 r. p. m., under benzol. The engine was unchanged in any respect for this test except the reduction of the needle valve opening to ½ mm. instead of the 1 mm. opening used with benzol.

With the hydrol, operating for one hour, the following test results were obtained:

Brake horsepower	28.2 horsepower.
Fuel	290 grams per horsepower hour.
R. p. m	1,600.
Exhaust	Clear—invisible.
Cooling water	60° to 125° F.
Spark plugs removed	No fouling—clean.
Engine started	On fuel—cylinders primed with benzol.

The inventors stated that the fuel delivers high power, due to better combustion; that there is no carbon residue; that the flash point of the mixture is higher than the benzol; and that the fuel is not dangerous to handle.

Samples of the mixture kept for over two years show no sediment or settling out of water or other products mixed with it.

The rights have been purchased by Mr. Wilhelm Deussen, a capitalist. Mr. H. S. Foreman, of San Francisco, has an option on the American rights and it is understood will take samples to the United States for tests. The latter will be in the United States some time in May, 1921.

"NOISE MAKER" FOR THE PROTECTION OF SUBMARINES AGAINST THE LISTENING DEVICES OF ENEMY SHIPS.

Source: Reliable.

(14600.)

25 May, 1921.

This device was developed by the firm of Siemens-Halske during the war to supply the German submarines with some device to enable them to counteract the listening devices used on drifters and sub-chasers. The instrument is designed to be fired out of the torpedo tube and set in operation when a submarine is in danger of being located by listening devices.

This instrument when set in motion produces a sound similar to the noise made by a submarine under way submerged, thus permitting the submarine to escape at slow speed while the enemy bombs the noise maker. The device can be fitted with a small propeller to keep it in motion. The buoyancy is calculated to permit same to float at a depth of about 10 meters below the surface or more if necessary.

None of these devices were actually used, as they were not developed in sufficient time.

GERMAN RADIO-CONTROLLED BOATS.

Source: Reliable.

(14452–A.)

25 May, 1921.

The following information concerning the radio-controlled speed boats used by the Germans during the war from Zeebrugge has been obtained from the engineers of Siemens-Halske, responsible for the development of same:

History of Development.

The earliest type of radio-controlled boat in Germany was developed by Dr. Wirth in Bavaria before 1911. Siemens-Halske were interested in developing the idea and started work on theirs in 1912. By 1914, it was possible for this concern to demonstrate the principle on the lakes near Berlin. On the outbreak of war, the German naval authorities expressed interest in the idea and requested modifications in certain respects to meet the military requirements. Ex-

periments were conducted during the next two years on a type suitable for naval use.

Eighteen of these radio-controlled speed boats were sent to Flanders for operation against the English monitors in the channel. These boats carried a cable which unwound from a reel, causing no drag or reduction in speed. This principle was adopted originally as it was feared that radio interference could be effectively made to prevent control of the boat.

General Description.

Length—water line, about 60 feet.

Power, 360 horsepower.

Engines, two Mayback motors.

Speed, 30–31 knots.

Fitted with light armor against shrapnel.

Searchlight to aid control.

Each boat carried 750-kg. (1,650 pounds) explosives.

Special fins fitted to upper hull forward to reduce the bow wave.

Boat completely decked over to prevent entrance of water.

N. B. Mayback airship motors were chosen on account of the fact that they could be easily fitted into the boat owing to construction of bedplate.

Double ignition, with two separate magnetos fitted to each engine.

Radius of action, 24 kilometers.

An airplane controlled the boats by radio, as it was not possible to observe them from the shore station.

The radio signals from the airplane controlling were received on the antenna at the shore station and automatically sent out to the boat over the trailing cable, using the water for return conductor.

The boats were later improved, as follows: Engines, two 250-horsepower motors, Siemens-Halske; speed, 32 knots; r. p. m., 1,400.

Later one boat was ready, but not used, having 1,000 horsepower, with expected speed of 35 knots. Control from airplane direct without use of trailing cable.

Measures used to safeguard boat:

The explosive charge was armed by special radio signal.

The control and explosives could be "locked," so that any interference was ineffective until another special signal "released" the controlling apparatus.

The explosive charge could be detonated at any time to prevent same falling into hands of the enemy.

Methods to prevent radio interference:

(*a*) Short-wave length, 80 meters and less, which could be varied at will.

(*b*) Automatic apparatus for very rapid sending.

(*c*) Locking device which could be operated by radio when boat was within 200 yards of enemy ship. Boat then continues course regardless of enemy radio interference.

(*d*) Heterodyne method used for very sharp tuning.

(*e*) Signals sent automatically with such great *rapidity* and *accuracy* that enemy can not determine by ear the proper wave length necessary for interference, nor can he recognize the exact intervals necessary to cause the mechanism to function.

Principle of Radio Control.

The system employed by the Germans for the radio control was fundamentally the Siemens-Halske system for automatic sending and automatic printing of radio messages. This system was used by the German post office and G. H. Q. during the war and subsequently. Sending speed is 800–1,000 letters per minute. The system is known to the "Radio Corporation of America" through Dr. Alexanderson, but general description will be forwarded with the next report on this subject.

Siemens-Halske claim a number of advantages for this system of control, viz, rapidity of signaling, absolute reliability of operation, extremely sharp tuning, exceptionally good relay system, and freedom from interference.

Special Features.

It was found by experience that the airplane antenna had to be specially constructed owing to the existence of an electromagnetic shadow in the form of a cone directly under the aerial. Special construction was necessary.

Either damped or undamped signals may be used.

The rotating disks in the boat are brought into synchronous speed for one revolution by means of springs instead of rotating continuously, as in the case of the commercial instruments.

The sending apparatus (radio) weighs 100–120 kgs., while the receiving apparatus is slightly heavier, including all relays.

The engines attain full speed 20 seconds after starting.

The system used by Max Lautner, described in reference (*a*), was considered by Siemens-Halske, but was not used, as it was believed the herein-described system was better.

Results Obtained.

Eighteen boats with trailing cables were sent to Flanders station.

Two boats were hit by English destroyers.

The boats without trailing wires (direct radio control) came into actual service, although one was shipped to Zeebrugge at the time the station was being dismantled.

Other radio-controlled boats were contemplated for use against the Grand Fleet.

Recommendations.

These boats cost about $30,000 apiece to construct in Germany.

It is believed that a group of, say, 10 of these boats could be profitably used during target practice to stimulate attack by enemy torpedo flotillas, and thus exercise the guns' crews and fire-control personnel in actual firing against high-speed attacking vessels. Owing to the extraordinary difficulty of obtaining hits against this type of vessel, the target practice might not be very expensive and would certainly provide the most excellent practice for the torpedo-defense control as well as for the aircraft personnel directing the boats.

In addition to the above, there would be excellent opportunities for exercising in radio control by aircraft and in studying and exercising the radio personnel in methods of interference.

ENGAGEMENTS OF UNITED STATES VESSELS WITH GERMAN SUBMARINES.

Source: Reliable.

(14548.)

11 May, 1921.

The following data supplied by Commander A. S. Farquhar, U. S. Navy, in re engagement of the U. S. S. *Starrett* with German submarine off Fastenet, has been checked up from German sources, German Admiralty, and the following data obtained, viz:

FROM COMMANDER FARQUHAR'S STATEMENTS:

Action began 4.51 p. m., 31 May, 1918; latitude 51–4 N., long. 9–15 W.

U. S. S. *Starrett* and U. S. S. *McCall* escorting oiler *Astrakan*.

Laid first depth barrage, 10 charges, beginning 5.02 p. m.

Laid second depth barrage, 2 charges, beginning 5.22 p. m.

Laid third depth barrage, 5 charges, beginning 5.28 p. m.

Submarine broached at 5.33.

Laid fourth depth barrage, 7 charges, beginning 5.39 p. m.

Laid fifth depth barrage, 2 charges, beginning 6.36 p. m.

Laid sixth depth barrage, 1 charge, beginning 6.56 p. m.

Submarine broached.

Laid seventh depth barrage, 4 charges, 7.23 p. m.

Led *Cushing* and *Fanning* over submarine and laid barrage.

Laid eighth depth barrage, 2 charges, beginning 10.07 p. m.

Brought up heavy oil bubbles.

Followed all night and at 4.26 a. m. missed ramming by 20 feet; submarine submerged and came up to eastward about 7 a. m.

Opened fire and was joined by *Jessamine*. No more seen of submarine.

From very reliable German sources in Admiralty the following has been established, viz:

U–97 on 31 May, 1918, about 25 miles south of Fastenet, sighted an oil tanker with one mast and one stack, dazzle painting, of about 3,000 to 4,000 tons. Tanker escorted by two destroyers, about 7,000 meters distant. The convoy steered zigzag course.

The attack was made easier by reason of the zigzag course, but the torpedo missed owing to change of course after firing of same. *U–97* dived after firing to avoid expected destroyer attack.

Following detonations were noted:

5.55: 5 water bombs, 2 very strong.

6.20–8.58: A series of water bombs, which were not very effective owing to submarine changing course and depth. *U–97* assumed that position had been betrayed by oil bubbles.

The propeller noises of the opponents were clearly distinguished.

On 1 June, 1918.—5.35 a. m.: A destroyer appeared close behind in the wake of *U–97*. Shortly after two depth charges were heard at a slight distance, which *U–97* did not suppose were meant for her.

9. a. m.: Two distant explosions of depth charges heard.

U–97 received some slight damage from the depth charges, which were easily and quickly repaired, with the exception of several leaks in the tank.

U–97 returned to Emden on 12 June, 1918, after completing her operations off the Irish coast.

With the difference of one hour in the time of the reports (due to different methods of keeping ship's time), the data appears to fit in very well.

ELECTRIC TORPEDO.

Source: Reliable.

(14415.)

7 April, 1921.

The Accumulatoren Fabrik, of Berlin, Germany, gave the naval observer and Commander W. R. Furlong, U. S. Navy, the following information regarding the electric torpedo developed by them for the German Navy:

The batteries were developed especially for this purpose: Weight, 1 kilogram for every 30 kilowatt hours at maximum discharge rate. The batteries arranged to discharge 70 kilowatts in four minutes. The electric motors were manufactured by the firm of Siemens-Halske. Efficiency, 90 per cent. The range of torpedo was 1,500 meters: speed of torpedo, 27½ knots: diameter of torpedo, 50 cm.

This torpedo was developed for the German submarines and tested in the latter part of 1917 and resulted in a speed of 25 knots. In June, 1918, further tests were conducted with the following results.

Range, 1,500 meters.

Extreme errors at target—4 meters right of point of aim; 6 meters left of point of aim.

Time of settling to correct depth—150 meters electric; 400 meters air torpedo.

Shots fired at depth of one-half meter did not break through surface and were entirely invisible.

As a result of test, the German Admiralty placed orders for large quantities of this type of electric torpedo for submarines. The diameter and weight was held the same as for the air torpedo (fully charged). At the time of the armistice all torpedoes were destroyed by the Germans to prevent their falling into the hands of the Allies.

The firm states that they are able to construct a 10,000-meter torpedo with speed of 27 knots, having diameter of 60 cm. They are also prepared to furnish apparatus to reduce the swell on discharge of torpedo. This firm was formerly connected with the Electric Storage Battery Co. of Philadelphia.

If the department is interested in having these torpedoes manufactured in the United States this firm has compete working drawings at their disposal and is also prepared to send an experienced engineer to give the concern undertaking the manufacture the secrets of battery construction. The Accumulatoren Fabrik states that the Electric Storage Battery Co. should be in position to manufacture these torpedoes in a few months after receipt of plans and manufacturing secrets.

The advantages claimed are: Invisibility of torpedo, steady running of torpedo, cheapness of construction (one-third of cost of air torpedo), rapidity of construction in quality.

The Electric Torpedo in War.

I have shot off a number of torpedoes during the war; have attacked a number of ships and occasionally have sunk some. During the course of the World War I have carried the flag of the German submarines on the ocean and the smaller bodies of water and I do not believe that there is any manner of attack, any manner of using a torpedo, or any kind of a "situation" with which I am not familiar.

If in the following article I express my opinion of the electric torpedo which made its appearance, unfortunately only too late, and compare it technically and strategically with its predecessors, I do so in the conviction that I am thoroughly familiar with the manipulation of the torpedo as a weapon and under the standpoint that only the practical results will be mentioned.

I never wish to see my country turn over the most perfect development of one of the most terrible of all weapons to anyone who would

ever direct it against us, for the country which will equip its submarine flotilla with this ingenious German invention will far surpass all other countries in a naval way. As uncanny and as effective as may be the torpedo which is fired to-day by a submarine, even so much more uncanny and effective must it be if the only evidence of its dangerous proximity (which saved the lives of numerous ships and sailors during the past war) is done away with—i. e., the detonation and its contact with the water. There are other advantages of electric torpedo, but these two surpass all the others, which is my reason for beginning with them.

How much we German submarine commanders, as we heard of the experiments with the electric torpedo, have longed to have it at the front! How eagerly we have followed every phase of development of the new weapon because we saw with bated breath that we could no longer compete with the enemy's ever-progressing methods with the old weapon, no matter how perfect it might be! We lost boat after boat, and ship after ship escaped us, and, in 90 cases out of 100, all because of the detonation and the trail.

The reasons for the pernicious influences of these two factors are numerous and are manifest to anyone fairly conversant with the situation. To be exact, I will enumerate them.

(1) The enemy lookouts see them and the ship turns about. By turning only 45° the chance of the torpedo striking the ship (which I will gauge as 100 per cent) is reduced to 50 per cent. A modern ship can turn 45° in a few seconds, but a 30-cm. torpedo really requires a full minute for even the medium distance of 900 m. The ship up to this point, if it is careful about it, is beyond all danger. And we must be clear about this point: In war one is *very careful*. Even the laziest sentry doesn't go to sleep, because he knows his head is dependent on it.

(2) The enemy ship notices detonation and trail and backs *at full speed*. Every submarine commander before firing the torpedo endeavors to thoroughly gauge the speed of the enemy before firing the torpedo and sets the "Vorhaltwinkel" (applied angle) accordingly. If the enemy suddenly changes his speed, the torpedo most always must pass by, in front of the bow in the case in point.

(3) The enemy sees the trail and hears the detonation in his neighborhood, and when he has no time to turn about he *turns toward the submarine*. If in cases of this kind the ship is frequently struck and sunk, the enemy almost always has the satisfaction of destroying the submarine, for there is no more deadly weapon against a submarine which has come too near than being run down by the ship. In the few seconds that intervene between the firing of the torpedo and the dangerous proximity of the enemy's bow, the submarine, which is always difficult to manage after the firing of the torpedo, has no

time to get into a safe depth. In addition, the enemy ship in approaching the submarine has the chance to escape the torpedo on account of the fluctuating depths of the torpedo when it is first fired, which occurs with all kinds of torpedoes which are at present used.

(4) The enemy has a convoy of torpedo boats, submarine destroyers, fishing boats, etc. The detonation and the trail are noticed, and the accompanying ships, which have thus been shown the direction and position of the submarine, fall upon it with their water bombs.

These few examples give a clear picture of how greatly the success and safety of the submarine suffer on account of the treasonable accompaniments of the air torpedo. The failures and losses during the war led to the fact that out of self-preservation and in order not to lose the few valuable torpedoes, we had to restrict ourselves in a way that made success always more and more doubtful as the enemy's effectives improved. And if in the end of this war, the submarine became almost exclusively a night prowler, thereby losing a part of its terror and avoiding attack, it was entirely due to the impossibility of attacking an enemy who was watchful and well organized to combat torpedoes that betrayed themselves. If we had been fortunate enough at that time to have had the trailless electric torpedo, and if it had only had a course of 1,000 m. with a speed of 20 sm., then we would have won the war.

For a submarine which runs no risk of being discovered and an enemy who has no means of combating the existing danger represent the conquerer and the conquered. Absolutely! The natural supposition is that the submarine represents the most perfect training and efficiency, for otherwise it belongs in the training squadron; that is, that it can approach the enemy *unseen*, in every kind of weather, and use every method of attack from a good shooting distance.

I consider 600–1,000 m. a good shooting distance, and if I can fire a torpedo unseen at this distance and the torpedo does not betray itself nor me, then it doesn't matter whether it goes at the rate of 35 or 26 sm. The target is large enough at the distance and it doesn't matter whether I strike it in the middle, the bow, or the stern. I have witnessed the quickest sinkings in the case of bad shots where the torpedo struck the ship far from the middle—the ideal aim. Nevertheless, in summing up all the possible situation, I very much prefer a slower torpedo without trail and detonation than a quicker one with them. At least, according to my ideas, the electric trailless torpedo guarantees a *double* success and a triple length of life to a well-trained submarine as compared with the air torpedo.

If I am going to equip my submarine for close and distant attacks and also enable it to fire upon distant, worth-while targets—as, for

example, a squadron in line—I will give it a few far-reaching air torpedoes for which modern submarines have a large number of ejectors. In a similar way, all navies up to now have helped themselves by placing different speeds on the loaded torpedoes.

Before I take up the technical advantages of the electric torpedo I must draw attention to an important point which is closely allied with the points I have already made and which can not be overlooked on account of its boundless, while untried, possibilities.

I mean the moral effect of an unseen, oncoming destruction.

The deadening terror felt by large circles of shipping interests at the time of the institution of the German submarine warfare is not yet forgotten. It decreased as one became more efficient in eluding the submarine and saw success in defensives. The terror will remain in a submarine war with electric torpedoes and will change from time to time, for nothing is more deadening than a helpless impotence before an unseen enemy.

Added to all these strategical advantages of the trailless electric torpedo, which put all other considerations in the shade, there are a large number of technical advantages and perfections as compared with the air torpedo. By glancing at a diagram of each it can be seen how greatly the down stroke and depth steering of the electric torpedo surpasses that of the air torpedo. Through clever devices one has succeeded in bringing the variations of the depth steering down to a minimum and in preventing the breaking through the surface. Outside of the improved depth plate in place of the former depth piston, these technical improvements are achieved and depend on the much finer mechanism of the depth apparatus and the quieter movement of the torpedo machine.

Every expert knows what rôle is played by the down stroke and depth steering in practice. I only mention the fact that on account of the unsteady depth steering of our torpedoes in small depths ($1\frac{1}{2}$–2 m. depth for torpedo boats, submarines, etc.), and the resultant unnecessary waste of torpedoes, we finally gave up attacking flat ships.

The greater efficiency of the electric torpedo and the simplicity of its storage on the submarine is a further advantage in its favor. I no longer have to pump air every couple of days and no longer have to fear cracks in the machinery, because there is no possibility of a cutting through the machine.

The torpedo can never float after its course and in this way constitute a danger for its own ship. The space in the head of the torpedo for the charge is much larger in electric torpedoes since the circular battery cover which is found in air torpedoes has been done away with.

Finally, in the electric torpedoes there is no danger of a battery explosion, which frequently occurs in torpedoes with a battery filled at 200 "Atmospharen" and has become a menace for many submarines.

JAPAN—TORPEDO PRACTICE IN NAVY.

Source: Reliable.

(3310–A.)

6 May, 1921.

No torpedo practice is held by major ships in reserve, but target practice is held once a year by such vessels.

At ranges of about 12,000 meters gun firing is all by director.

During the summer target practice, 1920, the maximum gun range was 18,000 meters. Firing was at a towed target. Six rounds per gun, both large and medium caliber, was the allowance. Fire was controlled from the top by telephone. Spots were received from airplanes.

There have been quite a number of accidents to breech plugs. This has caused a lack of confidence in the guns. As a result the men don't like to fire guns and the crews are nervous.

Cash prizes are given to the pointers and trainers for excellency in gunnery for each practice and on every ship. Also bronze medals are given, but these do not become the property of the winners unless they are won two years in succession. These medals are highly prized, and when the wearers are forced to turn them over to members of other gun crews fights, resulting in serious injuries, are not infrequent. In general, the enlisted men display a keen interest in gunnery.

In the *Kongo* the turret shell rooms are one deck above the powder magazines. The men working in the powder magazines are always required to go barefoot, and are not permitted to carry knives, watches, or any other metal while in the magazine.

The turret accident in the *Haruna* during target practice, 1920, was caused by the projectiles jamming in the muzzle of both guns of No. 1 turret. These projectiles were a blunt-nose experimental type, unlike the long-nosed projectiles in general use. There were four of these projectiles on board. Both guns of No. 1 turret were burst, and the roof of the turret blown off. Both guns of No. 2 turret was also damaged. Eight men were killed immediately; 10 were wounded and brought to Yokosuka, of which number 8 subsequently died. (To date no information on this subject has been divulged by the Navy Department, despite numerous requests for same.)

The destroyer day torpedo practice was held against main fleet steaming in column at 21 knots. The destroyers were divided into

two groups. They approached from astern—one group on each beam—and fired when about abeam. Speed of destroyers was between 30 and 35 knots. The torpedoes were fitted with collapsible heads. All men not on watch are permitted on deck to watch the practice. The torpedoes make considerable wake and are easily followed throughout the run from the target ship by the wake.

During the six months that the *Kongo* was in full commission (August, 1919, to January, 1920, inclusive) she was under way two days out of six. Her complement was at that time 1,100.

Voluntary enlistment is for six years. The conscripts are enlisted for four years, but if a man has had no sick days and an absolutely clear record, his enlistment period is reduced to three and one-half years. Of this time, the first five months are spent in barracks, then two years and four months on a cruising ship, and the last nine months in barracks.

The men are hard worked. Working hours are from 6 a. m. to 4 p. m. There is much boat drill, both under sail and oars. The men are contented. Liberty is granted to half the crew every day from 4 p. m. to 7 a. m., and also 48-hour week-end liberty. That is, a man gets liberty every second day and every second week end.

Although uniforms are provided free, the pay is too small to save any or send any home. When a man is conscripted, his wife goes to her parents' home, and is provided for by them during his enlistment.

Punishments are: For ordinary minor offenses, deprivation of liberty, face slapped, pants kicked, and whipped with rope ends; for court-martial offenses, brig confinement on bread and water. No punishment is inflicted for drunkenness, except when accompanied by disorder. There is considerable drunkenness on board.

When the captain, officers, and some petty officers of French cruiser *Desaix* visited Yokosuka naval station about 15 November, 1920, they were shown around the station by a Japanese captain and several other Japanese naval officers. The question of Japan fighting America came up, and the Japanese interpreter, who was an enlisted man, remarked that "the U. S. better look out. When Japan turns her guns on the U. S. the American Navy won't be in it." The Japanese captain rebuked him, and said that if Japan and the U. S. ever did go to war, it would be a sorry day for Japan; that while the Japanese naval officers and men would go bravely into battle and do their duty, they couldn't have any hope for victory.

JAPANESE ARMAMENTS—PURCHASE OF ARMOR PLANT IN ENGLAND.

Source: Reliable.

(7010–E.)

14 April, 1921.

One of the essential materials for the production of battleship armor and guns is Swedish iron, and before the war the biggest buyer was the Japanese naval department. No fewer than 15,000 tons have been purchased this year and shipped to Japan, and it is understood that the Japanese are likely to be in the market again for Swedish material before midsummer.

The greater part of the resources of Sheffield firms for the production of armor and guns has been idle for over a year, and as it seemed that some of the expensive plant and machinery would not be required again—at least, some of it which had done long service—it has been sold to the Japanese Admiralty.

Further evidence of Japan's desire to make herself independent of British or other armament firms is an inquiry which has been made for a 16,000-ton armor-plate bending press. In the making of such plant a Sheffield firm specializes and will probably get the order. One of the firm's hydraulic presses has done important work for Krupps at Essen.

LATEST BRITISH 15-INCH TURRETS.

Source: Reliable.

(12811.)

27 May, 1921.

It is learned from an authoritative source that the standard British 15-inch gun has been used in the triple mount recently installed on the monitor and used in the firings at the *Baden.*

In a recent firing of explosive shell from these guns a premature burst occurred in the center gun, with the result that the muzzle was blown off the gun.

Great secrecy is being maintained in connection with this mount, but it is learned that the British intend to definitely place three gun turrets on their new battleships. The number of such turrets has not been definitely determined. It is understood that the three-gun turret is unpopular, but they feel its adoption is necessary in order to get more guns on the ship with the given tonnage.

JAPAN—SUBMARNIES.

Source: Reliable.

(6452–D.)

May 9, 1921.

Vickers (Ltd.), of Barrow, are preparing submarine designs for Japan. As previously reported, these designs are an improved and

slightly enlarged L class design. The vessels themselves are to be constructed in Japan from designs prepared by Vickers. That, at least, is the present program, although Vickers (Ltd.) are very energetically seeking contracts for construction of any kind for the Japanese Government.

In connection with this enlarged L class design information has become available to the effect that the Japanese desire that these submarines shall be capable of submerging from approximately full buoyancy in 30 seconds. This requirement has caused considerable difficulty in connection with the design of vents and flooding arrangements. It appears doubtful whether they will be able to accomplish this requirement without a number of radical modifications, which will to a certain extent prejudice other installations. However, an effort is being made to comply with this requirement, and it will probably be practicable to approximately meet the requirement. As is well known in the department, the submergence time of a submarine is very dependent upon the conditions under which the submergence takes place, and by adopting certain short cuts it will probably be practicable to fulfill the Japanese requirement, provided a certain amount of leeway is permitted in the definition of full buoyancy.

Some tests were recently conducted on the last British L boat completing at Barrow, which indicated that it would not be necessary to increase the size of the vents.

EFFECT OF ORDER OF NAVY DEPARTMENT, ARGENTINA, IN PROHIBITING TRAINING OF MORE SOUTH AMERICAN OFFICERS IN THE U. S. NAVY.

Source: Reliable.

(14024.)

29 April, 1921.

The above order has created somewhat of a sensation in the Argentine Navy and will cause modification of good many of its plans. The new naval aviation service will be probably hit hardest, for the director of aviation (Commander Gregores) and his assistant (Lieut. Commander Fitz Simon) have drawn up their plans for the next few years on a basis of training their aviators at Pensacola, until their own aviation school can be completed, and of using American material only. These officers have been successful in preventing purchase at attractive prices of English and Italian material on the argument of "buy only material of a kind that our aviators have been brought up with." Aviation matters are in confusion at present on account of an attack by Admiral Gonsalez Fernandez upon the selection of a site for the school, which has resulted in an order to

stop all construction work. Commander Gregores is scheduled to leave soon for the United States for the purchase of aviation material. This will probably be held up also.

Other plans that may be revised are the building of three submarines in the United States and the purchase of fire-control instruments for the *Rivadavia* and *Moreno*.

CHINA—THE NEW CANTONESE GOVERNMENT.

Source: Reliable.

(13992.)

22 March, 1921.

Sun Yat-sen, an administrative director of the military government, in an interview with the correspondent the other day, expressed the view that the American policy of noninterference in Chinese internal politics is of great help to China. The withholding of the American opinion in the disposal of the customs surplus is, according to Sun Yat-sen, the following out of this policy. He says the Cantonese should not oppose the Americans regarding the American action in this matter.

Gen. Tang Chi-yao, the Yunnan war lord, who has been driven out of Yunnanfu recently, is now in Canton, and has not yet formally participated in the administrative council of the military government. Sun Yat-sen is trying hard to procure the support of Gen. Tang to his proposed invasion and capture of Kwangai. Gen. Tang may support the proposal, if by so doing he will be enabled to return to power in Yunnan by way of Kwangai and Kweichow. Gen. Tang has not yet definitely decided upon any action. Many believe that Gen. Tang will finally come over to the side of Sun Yat-sen, as there seems to be no other way open where he may regain his power and control in Yunnan.

The real strength of the military government at present is in the Canton administration under Gen. Chen Chiung-ming, the civil governor and commander in chief of the Canton army. To secure a free hand in all actions in Canton it is necessary for Sun Yat-sen to have absolute control of the provincial government, a thing he has failed to accomplish thus far.

A case of local but international interest is now before the attention of the Chinese, British, and Japanese authorities in Canton. Mr. Tom Lai-ting, a Hongkong-born Chinese and therefore a British subject, was for several years engaged as an adviser to the then Kwangtung military governor, Gen. Mo Yung-hsin, a Kwangsi-ite, who was lately driven from power in Canton. The Cantonese authorities are now charging Mr. Tom of having committed high treason and an enemy to the Cantonese cause and are now confiscating

his property, including many trade junks and river steamers. It appears that most of the steamers have been mortgaged to the Taiwan Bank, a Japanese concern. Moreover, many buildings seized are not wholly owned by Mr. Tom but a corporation of which he is only a shareholder. It is feared by the more intelligent citizens here that the failure of the Canton officials to assume control of the customs administration and their possible yielding to British and Japanese consular demands for the return of Mr. Tom's property will lessen the foreign respect for the present régime.

A central labor union is being organized in Canton.—An eight-hour day law, usual wages on Sundays and holidays, and other demands, including better living conditions and higher wages, are what the union will go after. The Government, under the Kuomintang, is giving the laborers special recognition by assigning 3 of the 30 seats in the Canton City advisory council to members elected by the laborers. The Kuomintang will admit laborers to the party free of dues. The two Socialist newspapers in Canton, the New Republic and the Social, are lending the laborers all support.

Mr. Wang Chung-hui, a Cantonese, now chief justice of the supreme court of China in Peking, has suggested to the military government to end the present customs surplus dispute by devoting the greater part of the fund to famine relief in the north, after appropriating, say, $400,000 or a reasonable amount to the board of conservancy works at Canton. Up to last Saturday, no official statement has been given out here by the military government officials relating to this suggestion.

The faculty and students of the High Normal School in Canton, an institution under the supervision of the Peking ministry of education before the north-south struggle, are unwilling to submit to the control of the newly created educational commission of the Canton provincial government. They have strong opposition against the leading member of the commission, Mr. Chen Tu-hsiao, formerly a professor in the Government university in Peking and a strong Socialist, now having so much influence over a section of the Cantonese young people. The Government is backing Mr. Chen, and two newspapers were punished last week for attacking the character and speeches of this Socialist. The charge now circulated against Chen is that he is a Bolshevist and is receiving aid from some Russians for his publicity work. That Chen is too radical and his views too impractical and unwholesome for the Cantonese no one of sound and reasonable judgment will deny.

CONDITIONS IN THE NEAR EAST.

Source: Reliable.

(7429–M.)

12 April, 1921.

Georgia.

The Georgian Army is of small consequence. It is not believed that Georgia could muster over 100,000 fighting men, poorly equipped, and only about 50 per cent of them trained and experienced. Her army is without discipline and morale, owing to the mixed population. The small period national spirit has had for growth the contending political factions and the very poor quality of its officers, among whose glaring faults are everything from complete uncertainty as to who and what they are fighting for to plain disloyalty. It is further handicapped by the ignorance of the rank and file and by the stifling of all initiative in the European method of training men. Their artillery is a nonentity, and the only favorable factors found are minor, such as the slight benefit of British supervision of their army for a short while and the fact that a fair percentage are good shots and that they have some war veterans.

Georgia has no navy, having only a few harbor-patrol boats in Batoum and Poti.

The Georgian Government is graft ridden, incompetent, and has undoubtedly betrayed the people it represents. It was known even when I left that Russian Soviets had been organized all over Georgia, and in fact her lack of sincere patriots and national consciousness, together with the contending racial factions, were likely to have destroyed her from within without the grave menaces she is facing on every hand from without.

Georgia's chief interest to the world lies in her oil, her Black Sea ports, and her strategic position as a buffer State between and road of invasion into the various countries about her. Her commercial and economic situations are a little better than Russian owing to the contact with the world, but her finances are rotten, her chief product (oil) is not available, and her country being mountainous and with poor communication her other products are few in number and difficult of export. Her unsettled condition makes manufacturing impossible and her sole commercial asset is in being a means of export into Russia and her surrounding countries.

Georgia would do the world a great kindness were she to be the means of setting Nikoli Lenine and Mustapha Khemal Pasha at each other's throats, and it is not beyond reason that the Graeco-Turkey conference, Khemal's seizure of Batoum, and the most recent Greek advance are but part of the diplomatic strategy in Europe whereby it was hoped to do this or at least put the Turks in such a situation that a very little military pressure would force them to give in to the allied will.

Roumania.

Roumania is capable of putting into the field about 500,000 men, fairly well equipped and trained, most of them war veterans. The men are of fair physique, and while none too well blessed with intelligence, would make excellent soldiers if well led and of good morale. Their officers' corps is of miserable material, rotten with graft and politics, and by its spirit and precepts and the incompetence of its members, totally unfit to produce and lead competent, loyal fighting men in its own ranks, much less to do so in the rank and file of less intelligent and who are not expected to have as great or enduring loyalty and national spirit as their own. The Roumanian term of service is about three years, and as a general receives about the equivalent of $20 per month pay, and the officers are permitted to and do use their men for personal service, it is about the same as a three-year term of slavery on poor rations and with intolerable living conditions, under overseers who are brutal and work them to the limit. It is also easily seen that graft is a necessity as well as an inclination on the part of both officers and men in order to live. The Roumanians are by nature indolent, neglectful, and lacking in initiative. They are quick tempered and not at all fond of duty involving hardships or danger, unless compensated by the chance to make a play to the grand stand. Even then a long period of same shows a marked diminution of their ardor. For instance, of six sentries between the gate and my ship at Constanza, three had no ammunition, two lacked magazines on their rifles, and one had the whole breech mechanism of his rifle clogged with dirt. The Roumanian air force at Constanza consisted of seven machines, one of which could fly, and many pilots, one of whom could fly and did fly. He taxied as far as the harbor mouth on clear days about twice a week, and holidays, in clear weather, was wont to fly over the town once at an altitude of about 500 feet. The Roumanians are in possession of large quantities of railroad and war materials captured during the war. The railroad between Constanza and Bucharest is lined with them. They lay out in the open, no care being taken of them, and will soon be useless. Yet Roumania is purchasing part of the same railroad equipment, namely, 190 locomotives, from our Baldwin works. It was further noted that disease of all sorts was rampant among the troops and in so far as could be ascertained no real effort was being made to check it. It is believed that the morals and dependability of the Roumanian army are practically nil, they have fallen an easy prey to bolshevik propaganda, and that they would make no showing at all in any struggle except with some nation for whom they held a strong national antipathy, and very little with them.

The navy is in its infancy and seems likely to remain so. Apparently they have taken certain units from the army and handed them flat caps and informed them they were a navy. They are hampered by lack of funds to operate their ships, and seem to have a constitutional aversion to rough weather of any sort, anyhow. The ships which they had funds to operate would turn back and tie up for weather of which nothing would be thought of elsewhere. It is noted that both French and Italian officers have been detailed to instruct in handling the ships and training personnel, but, having so little cruising time, they have been unable to accomplish much with the Roumanians. It is further noted that the engineer officers of the two modern destroyers in the harbor of Constanza were one Russian and the other Austrian ex-naval officers. Despite the efforts of these trained foreign officers, marked material depreciation in both the boats mentioned was noted. The ships at Constanza consisted of two excellent modern destroyers of Italian make and model, probably Ansaldi built; four mine sweeping and laying patrol vessels of high speed and armed with small caliber 3-inch guns, equipped with Diesel engines, and evidently designed for offensive and defensive coastal action as well; one obsolete gunboat, about 600 tons; and eight light patrol boats, about half the size of a subchaser, Diesel engined, and armed with 1-pounders. It is not believed that the Roumanian Navy would become an important factor in Balkan or Black Sea affairs, as it suffers from all of the evils the army does, and lack of training in officer and enlisted personnel, and even shorter finances as well, also the graft in higher circles is even worse than the army, bad enough to threaten the failure of the national building program itself. The two destroyers previously mentioned have not been paid for, the money so appropriated having been spent, together with funds appropriated to investigate Roumania's naval needs, by the commission sent to France in investigating Paris cabarets. It is believed that Roumania's intention was to become the Britain of the Black Sea—not that Russia will cease to be a naval factor for many years—and to aid in her inevitable conflict with Bulgaria by being the dominant naval power. It is also believed that while these were the immediate intentions she has ambitions involving aggrandizement of territory at the expense of all the nations around her and ultimate domination and control, if not actual conquest, of all the Balkan group. It is not believed that she has national forcefulness, much less the other qualities necessary to do this, and she will be lucky if she survives herself.

The Roumanian Government is one of the most corrupt in the Balkans. The form and structure of government are all right if honestly administered, but as things are now the people are groaning under a

terrific and unnecessary load of debt and taxation. Living conditions are very bad, and industry is hard put to keep going. Foreign capital, much needed for progress and to put the business of the country on its feet, is very chary of entry in view of the widespread discontent, the improbability of the removal of its causes, the friction among Balkan nations, the uncertain attitude of the great powers, the national characteristics of the Roumanians, and the bolshevik menace. The Government has had little trouble in the past, though the evil conditions have been existent for a long while, as the bulk of the people are agriculturists and raise or produce most everything they need on their little farms. Their needs are very unpretentious and they are satisfied with a very meager scale of living. They are too poorly educated and in the average too poor in intellect to want or be able to take a direct and active interest in the Government. Consequently, up to the time that the war expenditures were added to the people's burdens, they did not feel it keenly enough to be prodded into resentment. Further, there has been recently a division of the large landed estates, whereby the peasantry acquired title to their lands, thereby placating them and adding materially to the amount of their earnings which they actually received. It is among the middle and manufacturing classes, however, where the gravest discontent is found—among these who, because of greater intelligence, are far more dangerous to the stability of the government than the small farmers. Roumania, like most Balkan countries, has excellent natural resources—has, in fact, enough in her oil and grain production to put her back on a sound basis and produce comfortable standards of living for all classes of her people were she honestly and intelligently administered by her Government. This is not likely to occur unless some larger nation with sound principles, initiative, and technical experts takes her over, and unless this control amounts to seizure of the country its efficiency is doubted, as graft left as a legacy by the Turkish régime has become so much the national pastime that it is difficult to conduct even ordinary business relations without severe loss.

Roumania, a country of extreme natural wealth, poorly prepared to defend herself, with large recently annexed territories antagonistic by race, personal interest, and past history, with Russia on one side casting covetous eyes on all she has, with Bulgaria on the other brooding over past treachery and thirsting for revenge, and Austria in back of her forever seeking an outlet by sea to the trade of the world, with an undefended seacoast, a highway for invasion, and her people ripe for revolt, goes blissfully on her way utterly ignoring the explosion impending. It is expected that something will drop there and very soon, just so soon in fact as any of her neighbors shake off enough of the menaces that are now holding them in check

or gain the support of any of the new combinations emerging from the muddle in which the war has left world politics and power. It is doubtful if any other power or combination would dare to intervene for Roumania for fear of bringing on another general war and because they all have their hands full now. Revolt of the people would but mean Bolshevism and will come at Russia's will as preliminary to conquest.

Bulgaria.

The Bulgars are a highly intelligent, patriotic, and progressive people. Personal contact with them was limited, but by observation and from conversations with foreign officers, their army and navy rate very high as effective fighting units. The Government is satisfactory and the people are contented, though keen for revenge for past defeats and to regain lost territory. The King is far from popular owing to his poor judgment to date in picking winners in the various wars they have been in. Bulgaria as the heavy loser in all the Balkan strife and the most spirited and progressive of the Balkan group is likely to be the cause of another Balkan war the minute she recovers sufficiently from the past disasters, or before, if circumstances or powerful allies give her half a fighting chance. The people figure that they can't lose much more and look forward hopefully to the present unsettled conditions around them to advantage themselves fully. Bulgaria is beggarly poor, yet her Government, finances, and commercial prospects are far better than the nations around her. The whole Balkan situation is loaded with possibilities for a war varying in size from a Bessarabian-Roumanian war of secession to a second World War.

Turkey.

Turkey's Army at present is shrouded in mystery. The end of the war found Turkey with practically all her man power under arms and a fair equipment, but short of ammunition. The bulk of the army disbanded to their homes with full equipment and but await a call to arms to constitute themselves an army again. About 150,000 of them are located in the city of Constantinople and form a reserve which would come very near giving the Turks the whip hand at any time they wished to take it there. The allied fleet, current diplomatic negotiations, the divided government, and the risk of injury to the city and prominent Turks there make it inadvisable for them to attempt to gain the ascendancy there at present. A few army corps were retained in service in Anatolia and a few small units for police and official functions in active service in Constantinople. The troops in Anatolia are the nucleus from which Khemal Pasha's army has sprung. Added to them are the Anatolia reserves and all men fit to bear arms whom they could arm and feed, in all not more than 300,000

men. The resultant force has been whipped into fairly decent shape but is very short on artillery. Wear and tear without replacement has worn out their light artillery, and shortly after the present Angora Government separated from the Constantinople Government, a British column, composed of marines and sailors, landed in Anatolia for a practice march, ran across a large park of Turkish heavy artillery and completely destroyed it. The Turkish munition situation has improved somewhat of late due to gun running on the frontiers, and it is believed from Russia's scanty stores, during the time Nationalist's intentions appeared pro-Bolshevik, but they are still impotent as far as large offensive operations are concerned because of it. It is noted that the war put an awful crimp in Turkish military man power, both because they make no effort to check disease in their ranks and because their losses were abnormally heavy, it being cheaper to kill Turks than Germans. Khemal Pasha, the Nationalist leader, is the most forceful and capable leader the Turkish nation has produced in generations. The Turkish officer corps is of men limited in intelligence but is otherwise satisfactory. The higher officers are very prone to play politics and graft is a fine art among them. The privates are absolutely bovine; in fact, it is believed that the much-vaunted Turkish indifference to death is a small part due to religion, a small part due to Asiatic fatalism, and a large part due to insufficient intellect to appreciate what death means. The bulk of the Turkish forces are war veterans and had years of training before, and everybody admits that they both can and do fight like fiends. They will prove too hard a nut to crack, it is believed, for any effort the major nations care to make or for Greece alone.

The Turkish Navy is a minor factor in the situation, being dominated by the allied navy in Turkish waters and having but one major ship, which is in poor condition. The Turk is not capable of grasping successfully the technical side of modern naval warfare. The Turkish governmental situation is very much tangled, all except in its form. You will never be able to govern a people with the racial, religious, and political differences that the Turks have in any other manner than by an absolute autocracy. When you further consider that graft is taken as a privilege, that assassination is a national pastime, and that these people have lived for the past hundreds of years by looting everyone around them, it will be understood that the job of governing them is one for a remarkably brilliant man with an iron hand and no conscience. Unless such a one shall arise Turkey will disappear from among the nations. The present Constantinople government, including the Sultan, is a figurehead, and the source of all power, including the hidden control in Constantinople, is Angora. The average Turkish régime, judged by western standards, is about the rawest thing ever, but a good, strong Turkish despot, with suffi-

cient political sense to realize Turkey's true position, would not alone be an unlimited blessing to Turkey but would safeguard foreign life and property and contribute materially to a speedy clearing up of the highly dangerous Balkan muddle.

Turkey is sharply divided into a small very wealthy class and a large and terribly poor class. They have never been able to develop a middle class because the Turk is neither progressive nor productive, and bourgeois are found only where these elements and stable government are found. Such persons as attain the dignity of a middle class are Greeks, Armenians, and Jews, and are promptly murdered and their goods looted. The wealthy class have a monopoly on all the brains and initiative in Turkey, and each class has been used to its rôle so long that there is little likelihood of change. The poor live in such squalor that almost anything suffices for their needs, and outside of the proceeds of an occasional mob looting never expect to have anything or be anything but some one else's slaves. Such is Turkey, a country whose inhabitants have never passed the medieval stage in anything.

Commercially she has splendid natural assets, but they plow still with the shoulder blade of the water buffalo, grain is ground with a mortar and pestle, and who with any sense is going to invest wealth in or bring progress to a country in which these very things are the surest way to a tombstone?

CONDITIONS IN BATOUM, GEORGIA.

Source: Reliable.

10 May, 1921.

Mr. Chater left Constantinople on April 13 on the steamship *Quequem*, arriving at Batoum on the 19th. He remained at Batoum until April 27, when he sailed for Constantinople, arriving here on May 2. The steamship *Quequem* flew the Greek flag and had as its cargo 350 tons of flour, sugar, condensed milk, and rice consigned to the Near East relief authorities in Georgia.

Mr. Chater's description of the conditions in Batoum follows:

The port of Batoum was almost deserted. There was one Italian ship in the roadstead and also one small Turkish ship, as well as a bolshevik submarine. On approaching the port the steamship *Quequem* signaled for a pilot, who came out in a small boat under the bolshevik flag. The Near East relief representatives had no trouble in obtaining permission to go ashore. In reply to their requests for permission the bolshevik authorities answered, "Why not?" whereupon they debarked, taking with them sealed bags of mail for the Near East relief authorities. There was no examination of their baggage.

The Government of Batoum is controlled nominally by a revolutionary committee, made up of Georgians, but the real power appears to be the Russian Secret Committee (apparently the "Chesvikaya"), which acts directly under orders from Lenin. Mr. Chater spoke with the president of this committee, whom he described as a "blue-eyed Russian and not a Jew." The absence of Jews on this committee was marked.

Shortly after the Russian Secret Committee had installed itself in Batoum it selected four offenders and profiteers of four different nationalities and made an example of them by giving them a public execution. Since then they had had very little trouble, and Batoum did not appear to be under martial law, and there were relatively few bolshevik troops on the streets, although there were probably strong bolshevik forces in the territory surrounding Batoum to crush any attempt at revolt against the bolshevik authority.

Mr. Chater had talked with the editor of the Russian Bolshevik newspaper in Batoum, who had informed him that the Bolsheviks realized that they must adapt their idea of Bolshevism to the local conditions which they found in Georgia. They therefore allowed small stores to stay open and had made other concessions to conciliate the Georgians. He tried to emphasize the fact that it was the Georgians themselves who had gone Bolshevik and had invited the Russian Bolsheviks to come in and give them the advantage of their superior knowledge and experience in Bolshevist principles.

The inhabitants of Batoum are living on 1 pound of sour black bread a day. They wash this down with tea. The people who have rugs or furniture to sell or exchange are able to save up enough rubles to buy a little meat in the small food shops which have been left open. One-half a duck cost Mr. Chater 18,000 rubles. If one compares this sum with the Government salaries, which are 25,000 rubles a month, and the rate of exchange, which is over 30,000 rubles to the American dollar, it is easy to see that the majority of the people are not able to do much purchasing in the shops.

Mr. Chater was impressed with the quiet conditions existing in Batoum and the order of the city. The railway to Tiflis had been put in good order and a train could make the journey in from 16 to 24 hours, which is many hours better than under the previous Georgian régime. There seemed to be plenty of rolling stock in the yards. The Near East relief had no difficulty in getting 25 cars to send their foodstuffs to the interior. Mr. Yarrow, who had arrived from Tiflis while Mr. Chater was in Batoum, reported similar conditions in Tiflis to those in Batoum.

The Bolshevik submarine in the Batoum harbor was one of 10 sold to the Russians by the United States in 1910. Mr. Chater talked with one of the officers on this submarine who served under the old

Russian Government, but did not seem to complain much about serving under the Bolsheviks. Four American flags are flying in Batoum—two over Near East relief offices; one over some Greek (?) trading company; Mr. Chater did not know who had put up the fourth. There was apparently no Turkish representative in Batoum. The Russian Bolsheviks had forced the Georgians to drive all the Turkish military forces out of the district at the time of their arrival, but the Bolsheviks themselves had carefully avoided coming into conflict with the Turks when they occupied the city. Mr. Chater had been informed, however, that the Bolshevists were now demanding that the Kemalists should immediately evacuate Alexandropol. He understood that the Turks had complied with their ultimatum.

RÉSUMÉ OF COAL STRIKE IN GREAT BRITAIN.

Source: Reliable.

(14431.)

20 April, 1921.

On the night of April 12 the threatened strike of the railway men and transport workers in support of the existing strike of the coal miners, which had been set for midnight on that day, was postponed untll 10 o'clock on Friday night, April 15, pending a possible adjustment between the Government, the coal owners, and coal miners. The situation remained threatening up to 4 o'clock Friday afternoon, when the railway and transport executives sent throughout the country an order canceling the proposed strike, which was to have taken place at 10 o'clock that night.

In the three days intervening between the 12th and the 15th, momentous events occurred in the labor organizations of the country. In 1918 the so-called Triple Alliance was organized, comprising railway men, the transport workers, and the coal miners. The total number of men concerned was nearly 3,000,000. This alliance was looked upon as a great triumph by the labor leaders, especially those who represented the political aspirations of the Labor Party. They regarded the alliance as a powerful factor in British politics, and probably rightly so. They then formed a sympathetic liaison with the Labor Federation, which included another one and a half million workers, largely unskilled. A general executive was selected, known as the Supreme Council, and the consolidation of practically all labor interests in the United Kingdom became an accomplished fact.

On April 13 about 200 members of Parliament practically took the matter of negotiations with labor out of the hands of the prime minister and the cabinet. They formed themselves into a parliamentary committee and requested all parties interested in the controversy to appear before them. In the course of the hearings Mr.

Frank Hodges, secretary of the Miners' Federation, made a statement during the evening of April 14 which was taken to mean that the miners would consent to a discussion of possible settlement of the strike on a purely wage basis, such settlement to run only for three or four months, pending negotiations concerning other points upon which the miners were insistent. This was held as a solution of the difficulty, temporarily at least, and it was expected that on the morning of the 15th some arrangement would come to pass which would obviate the so-called general Triple Alliance strike and put an end to industrial suspense. The miners' executive, however, repudiated this suggestion and refused to enter into a conference unless the matter of nationalized wage scale and a pooling of coal-mine profits should be considered at the same time. The Government, through the prime minister, announced that the Government would stand firm against any pooling arrangement, and he invited the coal miners to again meet him. The only result of this invitation was a letter from the miners' executive setting forth the above contention.

The executive of the railway men and transport men in session on the afternoon of April 15 discussed the question as to whether the strike should be canceled in view of the miners' positions or whether it should be allowed to come into effect. The discussion was bitter and many dramatic episodes marked the discussion. The moderates were in the ascendancy, however, and at 4 o'clock of the afternoon of Friday, April 15, the cancellation order was issued.

The miners were extremely bitter, and the effect of this cancellation has been to cause a serious split in the labor organizations. Certain sections of the railway men and transport workers were strongly in favor of the strike and condemned their executive for its action. The coal miners have practically withdrawn from the Triple Alliance, and George Lansburg, the editor of the Daily Herald, the official organ of labor, frankly stated that in his opinion this was the greatest blow dealt to unionized labor in the history of the movement.

The result of the cancellation is, up to the present moment, that the railway men and transport workers are carrying on and the coal strike still exists.

A meeting of the miners' executive has been called to assemble in London on Friday, April 22, and all parties to the controversy are now endeavoring to find some way of compromising the situation that such compromise might result in the resumption of coal mining.

British industry is slowly dying; unemployment is increasing enormously. On Monday, April 18, there were one and a half million people drawing unemployment pay from the national treasury. Many industries are closing down, and if the coal strike continues

another week, there will be several hundreds of thousands more people thrown out of employment.

Railroads are operating with reduced service, all racing is stopped, no coal can be purchased by householders except with a permit, and then only 56 pounds per week.

The economic situation is serious, and even if the strike is settled within the next three or four days, it will be several weeks before coal production can be brought back to the normal figures. About 50 coal pits have been rendered forever useless, thus permanently depriving about 25,000 men of employment in those particular pits. Many of the largest and most productive mines are seriously damaged and will take months to restore.

From a social and political point of view the situation is improved. The power of trade-unionism as a political force has been, at least temporarily, broken. The reaction in the community as a whole against trade-unionism and its proposed dictatorship has been extensive, and the officials of the railway unions frankly express their conviction that if they did now call a strike in support of the miners they would get very partial and possibly ineffective results.

Notwithstanding the calling off of the general strike on the night of the 15th, the Government continued its preparations for economic and military defense in view of the extremely unsettled state of affairs. To-day, however, the motor transport services, the food distribution services, and some of the defense forces are being rapidly demobilized as the opinion among the authorities is that the crest of the danger wave is passed. Recruiting for the defense units has been stopped, and many of the military forces will be returned to their permanent stations. Naval ratings to the number of 25,000 had been concentrated in danger spots and were at the pumps in some of the mines to keep the mines from flooding. These men will continue in their work, and, assisted by volunteers, will probably carry on for a time, as the miners still refuse to allow the pumping and ventilating men to return to their posts.

In some sections of the country, notably in southern Scotland and in South Wales, the feeling is very bitter and considerable rioting and sabotage have taken place. In these sections the railway men and other workers are in sympathy with the miners, being closely associated with them and all of the same class. There are various threats of local strikes, regardless of the action of the labor executives, but any disturbance that may occur in the near future will be probably local.

The miners' strike funds are exhausted, and there is much privation and suffering among the miner population. It is possible that substantial contributions of money will be made to the miners by

other labor organizations to assist them in their struggle, but such contributions as these can only be of most temporary help, for the number of people involved in the strike is so great that it is beyond the power of the trades-union funds to assist them effectively. It would cost at the very least $6,000,000 or $7,000,000 a week to support the miners in their strike, and no such sum is available. The courts have held that they were not entitled to unemployment pay, for which they have applied, as there is a notice on all the mines that the men can return to work at any time they want to on the terms suggested by the coal owners.

It is realized now, not only by the Government but by the general public, that the proposed reductions of wages in the coal mines were too drastic, and it is understood that the coal owners are willing to waive their contention in this respect. The Government has proposed to loan a certain amount of money in districts where the wages will be lowest. Out of the many suggestions that have been made some settlement will doubtless be reached. It would do the community no good to starve the miners into submission, which can be done, as this would simply mean another struggle later on when they had more money in hand. It is held by many well-informed men that the real crux of the wage situation will come when the railway men's wages are reduced by the expiration of present agreements, this taking place in August. From present indications, however, if the railway men struck, which is deemed highly probable, they would not receive the support of the coal miners. At the present moment organized labor, so far as a combination of unions is concerned, is thoroughly disorganized. The leaders are at variance, as is also the rank and file; and the Government, with its effective arrangements and prompt action in view of possible dislocation and social disturbances, apparently has the situation very well in hand.

CONDITIONS IN MUKDEN, MANCHURIA.

Source: Reliable.

(12680.)

29 March, 1921.

I had a talk yesterday with a Chinese official who is closely associated with the governor of Manchuria, Gen. Chang Tso-lin. He says that the governor is very much annoyed that people should accuse him of being connected with the monarchical movement and insists that he does not favor it in any way. Certain other officials who are in close touch with the governor, however, state that the governor is closely identified with the monarchist movement. It may be that there is such a popular outcry against the scheme that the governor is beginning to doubt the wisdom of supporting it and

he may be uncertain of the support which hitherto seemed almost sure. Either this is the case or he does not want his real attitude to become known. He intends to go to Peking later on, but the report that he is to go there immediately is incorrect.

I have been told by well-informed Chinese that the Japanese are accumulating large stocks of Chinese coal in Japan and that they do not seem at all anxious to dispose of any steaming coal. My informant also states that the Japanese are importing unusually large quantities of beef from China for canning purposes and that the Chinese believe that their efforts in these two directions are part of their preparations for war.

A British subject from Harbin told me yesterday that the Japanese in Siberia are endeavoring to get as much gold and other metal as they can and that they are doing this by a system of barter. He says that the Japanese up there seem to think that this is a good time to have a war with America, for they believe that the United States would be better prepared as the years go by and that the American Navy especially will be better in a few years than it is to-day. While, of course, their eight–eight naval programme will place them in a favorable position by 1928, they believe that by 1923 or 1924 the United States Navy will be relatively stronger than it is to-day.

From what I can learn it is true that the Japanese are considering the withdrawal of their troops from Chientao, but they will very likely insist upon having a certain number of Japanese police or gendarmes there, and this, of course, would tend to undermine China's sovereignty and would be the first step toward Japanese political control.

Semenoff's agents are still very active, and they apparently intend to make Mukden one of their principal centers. It is said that their financial office will be located here and it is probable that a certain amount of the administrative work will be carried on in Mukden. For a cnosiderable time they have been holding frequent conferences with Chinese and Japanese officials and it looks very much as if some kind of an understanding has been reached. While the Manchurian officials may not be assisting Semenoff actively they do not seem disposed to hold him or his subordinates in check and do not seem to be making any great efforts to oppose their program.

There is a great deal of uncertainty about the whole political situation, and the real policy of the governor general here is still doubtful. For many years, however, he has made his plans from day to day according to circumstances and he always endeavors to keep in with the various factions, so that whatever developments may arise he will be in a good position to take advantage of them. His policy is one of opportunism and is therefore liable to change

at any moment. I believe, however, that his present intentions are what I explained to you recently in Peking and that he will hold to this program unless the probable opposition appears too overwhelming.

EXTRACTS FROM THE OFFICIAL REPORTS OF FLAG OFFICERS AND COMMANDING OFFICERS OF THE GRAND FLEET ON THE BATTLE OF JUTLAND.

Source: Lieut. Commander H. H. Frost, U. S. Navy.

In this and subsequent issues of the BULLETIN extracts from the British official reports will be published under the following parts:

PART I. BATTLESHIPS.
PART II. BATTLE CRUISERS.
PART III. CRUISERS.
PART IV. LIGHT CRUISERS.
PART V. DESTROYERS AND DESTROYER LEADERS.
PART VI. AIRCRAFT.

These extracts will be further divided under the following sections:

SECTION A. GUNNERY.
SECTION B. TORPEDO FIRE.
SECTION C. ENGINEERING.
SECTION D. COMMUNICATIONS.
SECTION E. MISCELLANEOUS.

Part II. Battle Cruisers. Section A. Gunnery.

"LION"—CAPT. A. E. M. CHATFIELD.

1. Enemy opened fire at 3.47 p. m., *Lion* replying half a minute later, the range being 18,500, course ESE. *Lion* was twice hit by heavy shell at 3.51 p. m. At 4 p. m. a shell disabled "Q" turret, and shortly afterward *Indefatigable* was seen to be blown up, evidently by a magazine explosion.

2. At 4.02 p. m. the range was 14,600, and as the enemy appeared to have our range, course was altered on two or three occasions 1 point to throw him out. The enemy appeared to be hit several times by our shell. *Lion* was firing at the leading ship, which was either *Lutzow* or *Derfflinger*.

3. At 4.12 p. m. our course was SSE. and range 21,000, and course was altered to SE. to close the enemy. At this period more than one enemy ship was firing at *Lion*, and she was hit several times, but no important damage was done, though several fires were started, and there was a large number of killed and wounded, chiefly from a shell that exploded on the mess deck in the canteen flat.

4. *Lion* reopened fire at 4.38 p. m., reengaging enemy leading ship (*Von Der Tann*?) shortly after we passed wreckage of *Queen Mary*, with survivors in water, and a destroyer. The ship was now

hit several times, the range being 15,000 yards. The ship had fires in several places, including a cordite case in the starboard 4-inch battery, which I ordered the 4-inch crews to extinguish, but this could not immediately be done owing to their extent and to the pressure on the fire mains being lost from perforations. All fires were eventually got under control.

5. About this time, a fire which had been smouldering in "Q" turret ignited the charges still in the trunks. This killed all the magazine and shell-room parties and reached to the mess deck, where it burned some of the ship's company. The magazine doors being shut, however, saved a more serious explosion. A fire was also reported in "X" magazine, but this proved to be an error, due to smoke penetrating down from a heavy shell burst in the sick bay, which killed a large number of men in the vicinity.

6. At 5.01 p. m., fire was shifted to *Lutzow* class again, range 15,000 yards. *Lion* was hit twice by big shell, one of which wrecked the ship's galley compartment.

7. At 5.46 p. m., the range was 14,000 yards and the enemy was observed to be hit by two salvos, causing him to alter course to starboard and to cease fire.

8. At 8.23 p. m., *Lion* opened fire with rapid salvos on his leading ship, either *Lutzow* or *Konig* class. Our shooting appeared to be very effective, and the enemy appeared on fire at 8.27 p. m.

FIRST BATTLE CRUISER SQUADRON—REAR ADMIRAL O. DE B. BROCK.

9. At 3.45, concentration of fire signal was made: "Leading pair engage right-hand ship of enemy."

10. At 3.50, enemy opened fire and missed over, which was returned by the battle cruisers at 3.51 p. m. The action then became general, the enemy rate of fire being greater than ours, due to the conditions of light and wind. *Lion* was hit at 3.55 p. m. and *Princess Royal* at 3.56, putting main control out of action. Enemy fire then became short, spread of salvos being very small and error for direction practically nil.

11. At 3.59, hits were observed on enemy No. 3 in line. Spotting became difficult owing to smoke from destroyers.

12. At 4.16, Argo tower was repaired and ship fired with main control again.

13. At 6.05, leading battle cruisers' fire was then masked by first cruiser squadron, who were very heavily engaged by the enemy. Enemy appeared to be firing shrapnel at times.

14. At 6.22, what appeared to be an over at First Cruiser Squadron put *Princess Royal's* "X" turret out of action. At this time the leading four enemy battleships appeared to concentrate on *Lion* and *Princess Royal.*

15. About 8.32, *Lion* and *Princess Royal* were again hit.

"QUEEN MARY"—MIDSHIPMAN J. L. STOREY.

16. The fire was maintained with great rapidity till 5.20, and during this time we were only slightly damaged by the enemy's fire. At 5.20 a big shell hit "Q" turret and put the right gun out of action, but the left gun continued firing. At 5.24 a terrific explosion took place, which smashed up "Q" turret and started a big fire in working chamber, and the gun house was filled with smoke and gas. The officer on the turret, Lieut. Commander Street, gave the order to evacuate the turret. All the unwounded in the gun house got clear and, as they did so, another terrific explosion took place and all were thrown into the water. On coming to the surface nothing was visible except wreckage, but 30 persons appeared to be floating in the water.

"PRINCESS ROYAL"—CAPT. WALTER COWAN.

17. The hit forward at 3.56 p. m. caused the electric training of the Argo tower to fail, and the hand gear was found to be set up. Control was turned over to "B" turret for 10 minutes and then resumed by the Argo tower, of which the range finder was out of action.

18. Shortly afterwards the High Sea Fleet came in sight, and our course was altered to the northward (4.38 p. m.). On picking up the enemy again their right-hand ship was seen to be enveloped in smoke and steering away. Four salvos were fired at a three-funnelled cruiser steering southward, and fire at 4.50 was opened on the second ship in the line, as *Lion's* smoke interfered with our view of the leading ship; she resembled the *Seydlitz*. The *Lion's* smoke becoming better, fire was shifted at 4.56 to the leading ship again (also of the *Seydlitz* or similar type). At 5.08 the enemy could no longer be seen and fire was checked.

19. The ship came about this time under a heavy fire, possibly from the battleships of the *Konig* class, which were seen abaft the beam. "X" turret was put out of action by this fire, and the ship was holed in the starboard after reserve bunker by another shot of the same salvo, which wrecked the after engine-room casings before exploding against the upper deck on the port side. Fire was checked at 6.22 p. m., the enemy being invisible owing to smoke, and advantage was taken of the lull to check the instruments.

20. At 8.21 p. m. fire was reopened on the leading battle cruiser, which could now be seen without any interference from *Lion* smoke, and good ranges could be obtained for the first time. She was repeatedly hit until 8.30, when she dropped astern on fire and was hidden by destroyer smoke screen. Fire was resumed at 8.33 on a three-funnelled battleship of the *Helgoland* or *Pommern* type, and hits were obtained with the second and third salvos. Fire was checked at 8.36, the target being obscured by the smoke screen.

21. The only electrical defect which developed in the course of the action affecting the fighting efficiency was the failure of the electrical

training of the Argo tower at the beginning of the action, caused by the blowing of the fuzes in No. 1 starboard and port pipe passages (caused by the explosion of the shell which hit at 3.56 p. m.). These were replaced and the Argo tower motor worked correctly.

22. The gunnery interruptions were:

"*A*" *turret—right gun.*—Retractor lever bent, causing misfires. Turret armorer and chief armorer away on advance leave, and considerable delay caused.

Left gun.—Crank pinion axis broke with breech in closed position. Breech could not be opened for 11 hours. Gun out of action.

"*B*" *turret.*—Turret armor hit without internal damage. Tubes occasionally misfired—bad tubes.

"*Q*" *turret.*—Right gun hit on muzzle, cracked inner "A" tube for 2 inches, and caused scoring of right trunnion bush.

"*X*" *turret.*—Twelve-inch hit on armor, which was badly distorted. Large piece thrown through gun house, killing left gun's crew, damaging sliding shaft to breech, and destroying all pressure pipes on left side. Turret jammed and out of action.

Gun-control tower.—Two 12-inch shell striking forward caused vibration, which put training gear temporarily out of action and jammed transmitter gear of Argo range finder. Slight damage by splinters to 4-inch gun circuits, etc., repaired by ship's staff.

Rounds fired.—"A" turret, 34; "B" turret, 78; "Q" turret, 78; "X" turret, 40.

23. *Princess Royal* was hit by approximately nine heavy shell, besides a constant stream of shell fragments. The principal damage was—

(*a*) Caused by shell exploding against upper deck in admiral's port cabin over "B" turret flat, which wrecked the cabin, killed and wounded many of the fore 4-inch guns' crews and salvage party, put the fore distributing station out of action till it could be cleared of smoke, partially gassed the men in the transmitting station and lower conning tower, and started several fires, which were very difficult to put out owing to gas and darkness.

(*b*) Hole through base of No. 1 funnel.

(*c*) Hole through armor in port forward reserve bunker, by which the fire main pipe and the gearing of the flood valve to "B" port magazine were shot away.

(*d*) Gun house of "X" turret.

(*e*) Shell through starboard after reserve bunker, which wrecked the after engine room casings and exploded on the port side of the main deck, killing and wounding many of the after 4-inch guns' crews and salvage party, breaking the fire main and brine system, and causing several fires.

"TIGER"—CAPT. H. B. PELLY.

24. 3.51: *Tiger* opened fire. Smoke from our own T. B. D.'s on engaged side which were proceeding to take station ahead caused considerable interference.

24. 3.55: "Q" turret hit and "X" turret hit.

25. 3.56: Hit under P. 6 6-inch gun.

26. It is of interest to note here that after 3.56 p. m. *Tiger* was apparently not hit again by heavy shell. Several minor hits were registered but no appreciable damage was done.

27. 4.34: Enemy torpedo boats were observed to turn and attack. Opened fire on them with 6-inch battery and appeared to find their range after three salvos. Range, 11,000 yards.

28. 6.07: Six-inch battery opened fire on light cruiser of *Kolberg* class on starboard bow and hit her. This cruiser eventually drifted between the lines and 6-inch battery fired several salvos at her and she was last seen sinking by the stern at 6.19.

29. 6.19 to 6.29: Firing a few salvos at opposite number, but spotting was not possible and fall of shot lost.

30. 6.36: Enemy developed a very heavy smoke screen and under cover launched a T. B. D. attack on the battle fleet. Opened fire with 6-inch guns. The shooting appeared to be good, and so the attack was not pressed home. The heavy smoke clouded fall of shot, but apparently several hits were made. Under cover of smoke the enemy turned away.

31. 6.37 to 6.39: About this time three torpedoes passed close to the stern of the ship. Course was altered for one of them, but the others were passing clear.

SECOND BATTLE CRUISER SQUADRON—REAR ADMIRAL W. C. PAKENHAM.

32. 4.26: "X" turret reported hit, but still in action. Ship now straddling.

33. 4.52: Unable to fire, though being heavily fired at, owing to being unable to get enough elevation on. Range, 19,000 yards.

"NEW ZEALAND"—CAPT. JOHN F. E. GREEN.

34. The day was hazy and fine with practically no wind. I should put the visibility down as between 7 and 10 miles, varying in patches. Smoke also added occasionally to the haziness, but I was rather impressed by the little smoke interference there was.

35. Range taking and spotting were difficult. It was very difficult to distinguish hits, but occasional bursts of smoke with a salvo seemed to denote a hit.

36. The firing of the enemy was extremely good, their salvos having very little spread, and they seemed to pick up the range quickly and correctly, and their salvos were rapid.

37. We were fortunately only hit once by a heavy projectile, about 1 foot above the deck on the port side of "X" turret (the after turret), which punched a hole about 2 feet in diameter. It also went through the tongue of the towing slip, which was secured round the turret. The shell must have burst on deck as there were sputterings round about there. It also damaged the deck, cutting through it and through the deck below into the engineer's workshop.

THIRD BATTLE CRUISER SQUADRON—CAPT. F. W. KENNEDY, SENIOR OFFICER.

38. The following is amount of ammunition expended by this ship during the action: 98 rounds of A. P. lyddite, 12-inch; 66 rounds of common lyddite, 12-inch; 10 rounds of powder, common, 12-inch.

"INVINCIBLE"—COMMANDER H. E. DANNREUTHER.

39. The ship had been hit several times by heavy shell, but no appreciable damage had been done when at 6.34 p. m. a heavy shell struck "Q" turret and, bursting inside, blew the roof off. This was observed from the control top. Almost immediately following there was a tremendous explosion amidships, indicating that "Q" magazine had blown up. The ship broke in half and sank in 10 or 15 seconds.

"INFLEXIBLE"—CAPT. EDW. HEATON ELLIS.

40. At about 5.30 p. m. firing was heard ahead, and at 5.40 four hostile light cruisers were sighted on the port bow, apparently engaging the *Chester*. On seeing the battle cruisers, these ships turned away; fire was opened on the second light cruiser from the right at a range of 8,000 yards, but was checked at 6 o'clock. As the ship fired at was enveloped in a high column of smoke and was not seen again, it is presumed that she blew up. Fire was reopened on the next cruiser, but after one salvo was fired she disappeared in the mist. Meanwhile the four destroyers in company had left the squadron in order to attack the enemy and were last seen hotly engaged.

Part II. Battle Cruisers. Section B. Torpedo Fire.

"PRINCESS ROYAL"—CAPT. WALTER COWAN.

1. At 6.40 p. m. a torpedo missed the ship, passing from port to starboard under the middle section again.

THIRD BATTLE CRUISER SQUADRON—CAPT. F. W. KENNEDY, SENIOR OFFICER.

2. The First Battle Cruiser Squadron was then sighted on our port bow, heavily engaged with some enemy whom I could not see, owing to the mist. At 6.13 p. m. *Invincible* turned to starboard, apparently stopped, and large quantities of steam were observed to be escaping from her escape pipes. At the same moment *Inflexible* turned to port and tracks of torpedoes were observed by *Indomitable*

coming from the enemy's light cruisers with whom we had been engaged. The range at which I engaged them was about 12,000 yards. I turned away from the torpedoes and increased to full speed. One torpedo actually ran alongside this ship at a distance of about 20 yards, which we managed to outrun. As we turned, two torpedoes passed close to the stern of the ship, but they had run their distance, for I managed to turn ahead of them and resume my place in the squadron, as did *Inflexible* astern of *Invincible*, which ship was then again going ahead, having turned to about 153°. In all about five torpedoes' tracks were seen coming from the enemy's light cruisers.

"INFLEXIBLE"—CAPT. EDW. HEATON ELLIS.

3. At 6.15 p. m. two tracks of torpedoes were observed; course was altered to avoid one which was seen to pass down the port side at a distance of about 20 feet (the torpedo was going very slowly, apparently near the end of its run); the other torpedo passed astern. At about this time another torpedo was observed to pass underneath the ship and emerge the other side.

4. At 7.25 p. m. enemy's torpedo craft approached to attack, but were driven back by gunfire; the track of a torpedo passed 150 yards astern of the ship.

Part II. Battle Cruisers. Section C. Engineering.

"PRINCESS ROYAL"—CAPT. WALTER COWAN.

1. The main engines and boilers were not affected by hits, and steam was easily maintained for all services. Examination of the propellers by divers shows that a very small piece has been removed from one blade and a cone from a propeller nut has come off. This may have been caused by the collision referred to in paragraph 7. The explosion of the shell which came through the starboard after reserve bunker and wrecked the casings of the after engine rooms filled them with dense smoke, some of which penetrated to the starboard forward engine room, but this dispersed after the fire was subdued, the hole on the port side of the after deck facilitating the dispersion.

2. The electric light on the upper and main decks was cut off at the switchboard previous to the action to prevent probable causes of fire through short-circuiting of leads.

3. The fires were subdued in a minimum of time, but under much difficulty, due to the lack of electric light, the failure of the oil lighting, the breaking of fire mains and valves, and the heavy smoke and gases caused by the explosions and fires.

Part II. Battle Cruisers. Section D. Communications.

"PRINCESS ROYAL"—CAPT. WALTER COWAN.

1. *Voice pipes.*—Captain's, on compass platform to Argo tower and between Argo tower and director tower, both cut by fragments of the

first salvo which hit the ship. All voice pipes in both struts and auxiliary director circuit destroyed by shell.

THIRD BATTLE CRUISER SQUADRON—CAPT. F. W. KENNEDY.

2. At 2.23 p. m. we received from *Galatea* our first intimation that the enemy were actually at sea. We were then steering 115°; speed of advance, 14 knots. The speed of advance during the night had been 16.8 knots. Telefunker signals of strength 10 had just previously been heard. From then onward many signals, giving various positions of the enemy, were received.

Part II. Battle Cruisers. Section E. Miscellaneous.

"LION"—CAPT. A. E. M. CHATFIELD.

1. At 8.40 p. m. a heavy bump was felt on the starboard side. This appeared to me like a heavy hit on the water line, but this was not the case, and it has not yet been ascertained what was the cause. It is possible *Lion* may have run over a sunken ship, and divers are examining her bottom. Shortly afterwards *Indomitable* hauled out of line and reported she had been torpedoed, which she subsequently negatived, which seems to imply that she had the same experience as *Lion*.

FIRST BATTLE CRUISER SQUADRON—REAR ADMIRAL O. DE B. BROCK.

2. At 6.05 the first cruiser squadron was apparently engaging a light cruiser and stood out across the *Lion's* bows, necessitating an alteration of course of battle cruisers to port.

"PRINCESS ROYAL"—CAPT. WALTER COWAN.

3. Soon after opening fire a shell burst in "B" turret flat, putting out the lights, jambing the hatch to the fore distributing station and filling the air with thick clouds of smoke, which were very irritating to the eyes and throat, especially the latter. Respirators were immediately put on and were found most useful. Goggles were used but were found to get dimmed. The gases, being heavy, hung about in the distributing station for hours afterwards. The effects of the gas on the system also became obvious by nausea, giddiness, and vomiting, so that the station was evacuated and the port fore 4-inch battery used. The removal of wounded, as anticipated, proved slow and very difficult. After the action was over the fore distributing station was used for operations.

4. The greater proportion of the injuries consisted of burns about the face and arms, which proved serious and led in a few hours to much swelling of mouth and eyes and great shock.

"TIGER"—CAPT. H. B. PELLY.

5. As *Tiger* passed through the cloud there was a heavy fall of material on her decks, but no sign whatever could be seen of the *Queen Mary*. She must have sunk instantaneously.

THE FAR EASTERN QUESTION AS RELATED TO THE INTERESTS OF THE UNITED STATES.

Source: Reliable.

(14535.)

22 April, 1921.

The following notes on the above subject were submitted to this office upon request by a well-known student on Far Eastern affairs:

In the event of a war between Japan and the United States occurring, or threatening actually (it is threatening now in portent), a very important element will be the attitudes and the acts of the other Far Eastern nationalities—China, Siberia, and Korea. All of those peoples are now strongly antagonistic to Japan, and until Japan's policy is changed or moderated they will remain hostile to her. In case of a war between Japan and any other power those countries comprise a semicircle completely shutting off Japan from the mainland of Asia. *During the next few years measures should be taken to keep the American Government fully informed of sentiments and political movements in China, Korea, and Siberia, and a plan should be formulated by the proper administrative branches of the Government (State, War, and Navy) with a view to using those people in case of a war with Japan. Cut off from the resources of the Continent, and having to withstand also the armed hostility of all her neighbors, Japan's military power against the United States would be greatly weakened.* The American Government therefore should take measures as follows:

1. Keep in close touch with Chinese, Koreans, and Siberians as to their sentiments, political tendencies, organizations, plans, etc. To do this efficiently the personnel of our diplomatic and information services in the Far East should be increased and ample funds provided for this work.

2. Maintain friendly relations as between those peoples, organizations, etc., and the United States.

3. Devise a practicable plan whereby in the event of war between America and Japan (or any other power) *the Government of China can be induced to enter the war against Japan and render effective aid.* This could be accomplished by the United States providing arms, ammunition, finance, and military and naval instructors. With the present political and psychological situation, it should be comparatively easy to align China on the side of America. In a collision between Japan and America, China will have all to gain from a victory of America and all to lose from a victory of Japan. A victory of Japan would confirm her in her aggressions upon China and open the way for untrammeled further aggressions. On the other hand, the United States, by defeating Japan, could offer China a restoration of Manchuria and Shantung and security against the menace of Japan.

4. Do the same in regard to the Siberians and Koreans. This is not to say, of course, that the American Government should intrigue against Japan in Korea. That is improper, and it is not necessary. Americans had nothing to do with creating the bitter hatred of Japan that now imbues the Koreans, and they need do nothing to keep it alive. The American Government, however, should *recognize the existence of this sentiment of Koreans*, and in case of war should make all legitimate use of it. This factor should be considered in all naval and military plans of the United States.

5. Investigate and compile complete information about propagandas carried on and maintained in the Far East by all other powers.

A skillful use of the elements indicated in the foregoing can be made by the United States to exercise a strong influence *to prevent war* by causing Japan to consider and hesitate and by placing difficulties in her way.

Certain phases of the Asiatic question tend to align the sentiments of Canadians and Australasians with the United States as against Japan. The sentiments of British resident in Japan and in China also naturally tend to align with America on these issues. Taken alone, however, those sentiments of parts of the British and of some Britishers will not be able to dictate the policy of the British Government, as has been demonstrated frequently. But it may be possible for the American Government, by proper diplomatic activities and other means, to use that British sentiment so as to bring pressure on the British Government and to prevent a mistaken policy of the British foreign office from developing a serious and perhaps a fatal schism between America and Great Britain on a great question of international policy. It is legitimate for the American Government to utilize this element in trying to influence the British Government in respect to the Far Eastern question.

In this connection the current proposal for the Canadian Government to have its own diplomatic representative at Washington may have significance. The strategical portion of Canada vis-à-vis dispute between Great Britain and the United States has had in the past a tremendous influence in favor of America, for in the end Great Britain has been under almost decisive compulsion to yield because the geographical juxtaposition of Canada with the United States makes it impossible for Great Britain to defend Canada. Thus whatever results a war between those nations would have elsewhere, Great Britain almost surely would lose Canada and no possible gain elsewhere at the expense of the United States would compensate for that loss. This circumstance has given the United States a tremendous leverage on Great Britain in all issues between

them. The question now arises: By having separate representation at Washington, will the international status of Canada in respect to questions between the United States and Great Britain be altered? It appears if by excluding Canada by this method from the scope of Anglo-American disputes the British Government thereby would be relieved of the task of defending Canada and of the risk of losing Canada as a part of the Empire, that it would have much freer hand in regard to issues with the United States *in other parts of the world.* It may seem a fair cry from the proposed Canadian representation at Washington to the Anglo-Japanese alliance, but there may be a definite connection established at any time, and this possibility ought not to be overlooked at this juncture. At least the American Government should take all due precautions that what appears on the surface as an agreeable bond in the relations with a neighbor State does not have the effect of weakening its capacity to protect the national interests elsewhere.

Chinese evince a growing restlessness under and resentment at the practice of the powers to treat China as a diplomatic chattel by making agreements and alliances among themselves regarding China and without consulting the Chinese Government, whereby China's national possessions and rights are qualified or disposed of.

This induced the Chinese Government, in May, 1920, to formulate a memorandum (addressed, it is stated, to the British and Japanese Governments) objecting to a renewal of the Anglo-Japanese alliance relating to China without the Chinese Government being first informed and consulted. This action is significant and it is a departure in the diplomacy of the Far East.

That action of the Peking Government was supported, in July, 1920, by a memorial jointly composed and signed by all the representative Chinese organizations, which was presented to Sir Bielby Alston, British minister to China, at Shanghai, on July 5, 1920, and which was subsequently published in Millard's Review and other papers. This memorial set forth the objections of Chinese to a renewal of the Anglo-Japanese alliance in plain terms.

In that connection it is significant that the American Government has in the past taken the course to which China now objects, and to which China objected at the time the action was taken, viz, Minister Koo's note to the State Department dated in November, 1917, relating to the Lansing-Ishii agreement. It would be good policy in respect to American position in eastern Asia for the American Government to take the lead concerning China's point by voluntarily denouncing the Lansing-Ishii agreement on those grounds. (The agreement greatly embarrasses the American Government anyhow.)

Furthermore, there are intimations of a diplomatic attempt further to involve the American policy in China in useless ambiguities, and to cloud it in suspicion by making it appear that *if the Anglo-Japanese alliance is renewed the American Government is contented with its terms, objects, and operations.* It is alleged that there are taking place "consultations" between the State Department and the British and Japanese foreign office on this subject. Such reports have been widely published, with definite particulars of the meetings.

It should be recognized positively that nothing whatever that can be done will induce Chinese to regard the Anglo-Japanese alliance as having any other purpose, or as likely to have any other result, than to destroy the nationality and override the sovereignty of China. In every important event since the alliance was first made the actual operation of this alliance has been directly opposite to the terms of its statement of its objects. Under this alliance, which in the beginning guaranteed the independence of Korea and the unimpaired sovereignty and territorial integrity of China and the open door in China, Great Britain has connived with and acquiesced in the annexation of Korea by Japan, the virtual occupation by Japan of Manchuria and eastern Mongolia, the occupation by Japan of Shantung Province, and a general policy of Japan in China which beyond question aims at and rapidly is accomplishing the extension of complete Japanese control over China. (See files of British newspapers published in China and Japan.) There is absolutely no good reason to doubt that Japan's objects in securing a renewal of the alliance are to gain its support for a continuation of her policy in China and in Siberia. No student of far eastern politics will believe, if Great Britain renews the alliance with Japan, after many years of practical demonstration of what Japan's policy really is, otherwise than that the British Government is prepared to assent to a continuance of that policy and to support it morally, and perhaps with force, if necessary. No matter what the phraseology of a new alliance may be, there can be no better reason to credit its objects as stated by its phraseology than to believe at this time that the real purpose of the previous and existing alliances are expressed by their phraseology.

If the Anglo-Japanese alliance is renewed, its general objects will be the same as those of the existing alliance, and which have been demonstrated by the events of the past 15 years.

But a new alliance will be different from the old one in one important respect, whereas the presumed antagonist to its objects in the old alliance was Russia, the presumed antagonist in a renewed alliance will be the United States.

All this is plain as the noonday sun to residents of the Far East and to all Chinese who drink in political terms. Therefore, if the Anglo-Japanese alliance is renewed, and it is made to appear by its own statement or otherwise that the American Government approves it or is in any way satisfied with it, such attitude of the American Government will not in the least reassure Chinese about the alliance but *merely will convince them that the Japanese interpretation of the Lansing-Ishii agreement is correct and that the American Government is in line with Japan's policy in eastern Asia.*

An immediate result of such an attitude or declaration of the American Government would be to turn the present friendly feelings of China toward America into strong suspicion and resentment. It would take perhaps a generation for American policy in China to recover from the effects of such an action. As a means to discredit American policy utterly in the eyes of Chinese, the inclusion somehow of the American Government, either tacitly or by definite utterance, in a renewal of an alliance of Great Britain and Japan would perhaps be the cleverest diplomatic move that powers which desire such a result could conceive. Great care should be taken that any "consultations" of the State Department with the Japanese and British Governments on this or any other related questions should not be given such a coloring. *It would be a clever stroke for Japan if Chinese sentiment can be turned against America now.*

EXTRATERRITORIALITY IN CHINA.

Source: Reliable.

(14378.)

23 March, 1921.

The subject of the abolition of extraterritoriality in China is one that is being widely discussed and has met, unfortunately, with the support of a few prominent Americans and Englishmen who should know better.

I recently asked a well-known American journalist, Mr. Rodney Gilbert, to give me his opinion on the subject; his report is quoted verbatim below.

Mr. Gilbert has informed me that he intends eventually to publish the same in the press in a slightly modified form.

Mr. Lenox Simpson (Putnam Weale), now in the pay of the Chinese Government, is on his way to England via United States to launch a campaign in favor of the abolition of extraterritoriality. Simpson denies rigorously that such is his mission, but nevertheless the majority of foreigners can not help but believe that his statement is incorrect.

It is becoming very apparent in Peking that some Chinese person or group is furnishing the inspiration for a strenuous propaganda

campaign against extraterritorial jurisdiction. The subject is one which is ingeniously raised at all Sino-foreign dinners at which returned students are present. The President in his farewell audiences with all Chinese who go abroad, particularly with those bound for Geneva, impresses upon them that they must campaign in foreign lands for the abolition of the "humiliating" extraterritorial clauses in the treaties, and it is rumored that even foreign employees of the Government are requested to lend their weight to the campaign. Recently the Chinese press has carried the story of a projected model court which is to be established in Shanghai and which is to be such a perfect institution that the foreigners will hasten to abandon their traditional privileges and put themselves at the mercy of this beneficent institution. As nearly as can be learned no direct representations have been made to the legations on this score, but is very apparent to anyone familiar with the workings of the returned student's mind that all of this campaign is by way of initiation. The foreign diplomat is being shown what the returned student regards as signs of the inevitability of the abolition of extraterritoriality prior to the great assault upon the sentimentality and sympathies of our home governments. It is again characteristic of the mind of the returned student that while this propaganda is being carried gaily forward, the Chinese enthusiasts are utterly oblivious to the fact that in foreign eyes the little incidents in Urga and elsewhere are much surer signs that no nation will feel warranted in seriously discussing a revision of the treaties which secure us immunity from Chinese judicial control for several more decades.

It is irritating in Chinese company to hear Chinese educated abroad enlarging upon the beautiful law codes which are being compiled in the inner recesses of the poverty-stricken ministry of justice, or of the model courts which are to be established in the vicinity of treaty ports, where foreign prestige, built upon extraterritoriality, guarantees them against political or military interference. It is irritating because in such discussions the Chinese deliberately underrate the common sense of the foreigner and give him credit for no perception of what is going on all about him. For so many reasons that it is a waste of time to review them, a code of perfect laws drawn up in the ministry of justice or a model prison or a model court, built within a stone's throw of a foreign community, has no more to do with the administration of justice in Paoting, for instance, than the elaborate system for the ministry of war evolved in August, 1912, has to do with the state of the Chinese Army. No Chinese Army officer would have the face to present this document to a foreign military expert residing in China, who had asked for a monogram upon China's military machinery, but the returned student never lacks the audacity to bring forward his

paper systems, evolved in some ministry or bureau which has not enough influence to command the appointment of the street sweepers before its door, as arguments for the relegation of control over foreigners to such persons as those who were in supreme power in Urga this past winter or in Yochow last summer.

There are foreigners in the treaty ports who have never traveled in the interior, who have never seen a mutiny, who have never seen a man beaten in a yamen, who have never seen men crucified on city gates, who have never seen manacled prisoners being marched to exile, who have never seen a Chinese hsien magistrate in action, who have never seen a looted city—whose relations with the Chinese, in short, has been confined to intercourse with obsequious servants or with amiable merchants and highly polished foreign-trained theorists whose remarkable memories enable them to speak entirely in the pleasant platitudes of several languages. There are such persons who feel that in inflicting extraterritoriality upon the Chinese we are subjecting them to an humiliation from which in Christian charity they should be relieved. There are others whose knowledge of China is limited who imagine that they could do bigger and better business if they were permitted to reside in the interior under Chinese jurisdiction. It is doubtful, however, whether there is a single foreigner who has spent as much as a year outside of the treaty ports or who has watched the political wheels go around for an equivalent period in Peking who would not echo the emphatic *certainly not* which a recent canvass of the more important legations in Peking elicited for the writer.

The demand for the abolition of extraterritoriality does not come from the Chinese merchants, many of whom profit from sitting in the shadow of the protected foreigner, nor from the Chinese-speaking officials, who are perfectly satisfied to have the foreign nations relieve them of the responsibility of keeping their refractory nationals within bounds. It comes from the youngster who has been abroad, who knows that China is backward in the administration of justice, who resents that the foreigner should have taken cognizance of this fact in treaties and in actual relations with China, and who would like to save the nation's face by deleting these telltale clauses from the treaties. This desire is not born of patriotism, as is sometimes asserted, but from shortsighted pique. It is recognized as such by every foreign diplomatic or consular official in China and wins no respect for either the cause or its advocate.

The first evidence which the powers are going to demand when they come to consider China's fitness to take control of the persons and property of foreigners is that even justice is administered to the Chinese people themselves in their courts and yamens, that their

persons are safe when their conduct is within the law, that their commercial enterprises are free from official molestation or from unwarranted exactions, and that when they are charged with an offense, criminal or civil, in any court from Shanghai to Kashgar, from Hainan to Manchuli, they are given a fair trial according to a uniform, consistent system of procedure. The second guarantee which will presumably be demanded will be that between the persons or causes of Chinese and foreigners resident in China there be no discrimination. One is led to doubt by the spectacle of existing conditions, political and military, in the Provinces whether there is any honest Chinese who believes that China will be in a position to meet these conditions within the next 25 years. Nor are there many who will argue that the codification of laws in Peking, which enjoys actual jurisdiction over little more than the metropolitan area, or the establishment of model courts in treaty ports, to which foreign residence certainly will not be confined if extraterritoriality is abolished, are more than experiments in preparation for conformity to these conditions. The only common-sense view to take of the whole issue, putting aside consideration for both sentiment and face, is that it will be time enough to talk of placing foreigners and foreign interests under Chinese jurisdiction when China has achieved good government, both central and local, and that the ardent returned students who yearn after the subjection of the foreign resident to Chinese law will contribute much more to the consummation of their desires if they work for a good government which will give their own people a square deal than by sugaring their law codes, making show places of a few courts and prisons, or carrying their sorrows to Geneva.

An outline sketch of existing conditions in China which relate to the safety of the Chinese person or of Chinese property may help to emphasize the sensibleness of what has been said above.

The first argument against any immediate consideration of the abolition of extraterritoriality is that no administration, whether it be in Peking or Canton, or in the provincial capitals, exercises sufficient authority over the military and civil officials in the territories which it governs to insure the execution of its orders or its promises. There can be no uniform judicial system and no justice of any sort, for that matter, where there is no respect for authority. In the recent Urga case the Peking Government had no more authority over the officials in Urga who imprisoned Mongols and Russians without the semblance of a formal charge and with no thought of giving them a trial than it has over affairs in Nepal. And the officials in Urga with whom the resident foreigners were forced to deal at times enjoyed no more authority over the soldiery who looted Chinese shops, raped Chinese women, shot Mongols and Russians in

cold blood, and otherwise distinguished themselves than Peking has over the Shensi bandits. Peking can not stop opium in Shensi. Peking has not a semblance of control over any phase of the administration of Manchuria, where her chief military supporter is established. Peking can not order Wu Pei-fu to move one soldier in or out of a locality unless Wu Pei-fu sees fit to acquiesce. Peking can not stop Wang Chan-yuan from running the Wuchang mint at night in his own interest or from flooding the northern markets with depreciated coppers shipped free of freight charges on the Government railways. Peking can not call Li Hou-chi to account for supplying Chen Chiung-ming with equipment used against Lu Yung-ting. If Generalissimo Kuo in Yunnan were to find a relative of President Hsu's or of Sun Wen's in Yunnanfu to-morrow, and should decide to have him shot, neither Peking nor Canton would be in a position to exact reparation. Feng Yu-hsiang lives on railway revenue which should come to Peking, but neither Peking nor any neighboring Tuchun is in a position to quibble with the independent commander about these irregularities. Chen Chiung-ming can not prevent the soldiery in cities a hundred miles from his yamen from reopening the gambling houses officially closed and from running them to their own profit. When Chang Tso-lin decides to impose an illegal surtax upon salt the Peking Government is powerless to prevent him, even though it constitutes a violation of an agreement with foreign powers, so the Salt Gabelle is forced to pay the Tuchun $200,000 a month to desist. Li Hou-chi and Wang Chan-yuan get $100,000 a month each to keep their fingers off salt. When a military commander moves into a community and decides that his soldiers are due some fraction of their pay, he imposes a levy on the merchants and collects from foreign agencies like the Standard Oil and the B. A. T., as well as the purely native shops, and in such cases the Tuchun is not only unable but unwilling to interfere. If the merchants were not called upon to pay the soldiers would look to him.

In China to-day no Chinese business man can afford to establish a conspicuously wealthy enterprise unless he has the local official, or some other official more powerful than the local man, in partnership with him, or unless he contrives to get within the bounds of a foreign concession. A high smokestack is a too clearly visible clue to a possible source of illicit revenue for the local official. The only way a Chinese outside of protected areas likes to do business is in an inconspicuous way. The conspicuous shop in any Chinese city in which particularly rich wares are displayed and which has an air of great prosperity is invariably one capitalized by the officials. The same is true of banks. There are scores of high officials, and even of ex-officials with influence, who are annually presented with hundreds of shares of stock in new commercial or industrial enter-

prises in the hope that their names on the lists of shareholders will give the merchants some degree of immunity.

The Chinese traveler, when passing through an interior district in which many soldiers are garrisoned, always travels poorly and wears his worst clothes so as to be inconspicuous. A lawsuit in Chinese rural circles is a synonym for ruin and is never entered upon by any sane Chinese except when the craving for revenge upon some enemy renders him careless of consequences. It is traditional that the magistrate always contrives to get everything that both parties have before the case is settled. Bribery and the employment of false witnesses are as closely associated with courts in the Chinese minds as the witness box and the gavel are in the mind of the occidental. The successful farmer, whose diligence enables him to buy land and to add to his source of income, hesitates to register his purchases, prefers to take what are known as "white deeds"—deeds without the official seal—thereby laying up trouble for his descendants, because he does not want to attract official attention to his growing wealth. The foreigner, when shipping goods into the interior, trusts to his transit pass to see it through. The Chinese is held up and mulcted of all that he will pay without doing something desperate at every likin station, and Chinese transporting foreign goods under transit pass are forced to pay all they will pay at every station for the examination of their papers.

These are only a few inconveniences incidental to life and trade under Chinese jurisdiction which the Chinese live down by virtue of infinite patience, thrift, and good temper. The examples are chosen at random, but no foreigner would describe a system which embodied such impositions and annoyances as good government. Now, it would be interesting to know whether or not the advocates of the abolition of extraterritoriality believe that the foreigner, put on the same legal footing as the Chinese in China, would enjoy immunity from any of these trials and tribulations. The foreigner traveling in an interior community undoubtedly receives preferential treatment. The officials are solicitous for his comfort and the people are careful not to commit offenses against his person or property. This preferential treatment is not provided for in treaties and is not solicited by the diplomats. The abuse of the special privileges which extraterritoriality grants and of those which have nothing to do with treaties, but which the Chinese concede by courtesy, is the sole sound argument in this year of grace for the abolition of extraterritoriality. If all of our nationals in China were beach combers or ronin, we should either be forced to abandon extraterritoriality or govern China to control them. Whenever our nationals get as far beyond our consular authority as the subordinate officials of the Peking Government, for instance, are beyond the Government's

control, the Chinese will have an argument at hand which will force us to consider a revision of the extraterritoriality system. Until such time the responsibility for improvement is with the Chinese Government. When China is united, when all classes of Chinese officials acknowledge the authority of the Government to which the diplomats are accredited, and when justice is clearly administered to the Chinese people themselves throughout the land, it will be time enough to speculate upon the future and to debate as to whether foreigners under Chinese law will be given better or worse treatment than Chinese.

At this juncture we are led to conclude, though it may be slightly unjust, that the preferential treatment of foreigners in the interior is due to no inherent respect for the occidental or the stranger, but to the prestige which his diplomats, backed by treaties, backed in turn by gunboats and efficient armies, have come to enjoy in recent decades. We might be inclined to take a more charitable view if it were not for Urga and the situation of Russians generally. The Russians used to enjoy as much prestige in China as the rest of us. It needs no recapitulation of recent events to convince the public in China to-day that the status of the average Russian in Chinese eyes is lower than that of the average Chinese. The Russian, deprived of his extraterritoriality rights, is back where he was 300 years ago. He is a "waifan," an outer barbarian, ranking in the Chinese mind with the Tibetans, the Mongols, and the fish-skin Tartars. This is why they say *certainly not* in the legations when one suggests the possibility of a revision of the extraterritorial clauses in the treaties. It is amazing to the average foreigner that the Chinese in Peking, who are conducting the abolition propaganda and are sending delegates to Geneva to tell how China is inconvenienced by the extraterritorial provisions, can not see this; but they can not. They are so infatuated with themselves since they have contrited to deprive Germans and Austrians and now Russians of the protection of their consular and diplomatic agents that they are deliberately blind to the miserable showing that China is making in her administration and are shouting to one another that the great fight for "face" is nearly won.

We are going to hear more of this from Geneva. All Chinese, not to mention a foreign agent or so, who are bound for Switzerland are primed with sad stories of China's disabilities under the extraterritorial provisions. It would not be amiss if those who assemble at Geneva were provided with a few facts about the disabilities of the Chinese people under their own judicial and administrative systems. No one could compile a more convincing list of these latter disabilities than the Chinese merchants who enjoy the hospitality of the foreign concessions and who prosper by virtue of the protection of the protected foreigner.

FRENCH NAVAL POLICY.

Source: Reliable.

(11900.)

15 April, 1921.

A Tentative Naval Program—The Parliament is Requested to Come to a Decision Relative to the Construction of a Certain Number of Units.

But we must have at the earliest possible time a great many submarines and planes, for the prewar battleship has lived its life.

Last November I wrote in this paper that the general staff of the navy, the superior council, and the minister of marine had clearly expressed their opinion. Without expressly condemning the battleships, they decided that "the fleet should be particularly composed of submarines." It was thought that a great many were necessary; 100 was indicated as a possible number.

Since then an evolution has taken place as regards these conceptions. The chamber is requested to vote a "program," which its naval and financial commissions have already approved, which includes the construction of 6 light cruisers, 12 destroyers, 12 torpedo vessels, and 36 submarines. For 1921 one should be satisfied with executing a portion of the program; there might be constructed 3 cruisers, 12 destroyers, and 12 submarines.

It must be admitted that a certain amount of good will is necessary to give to these modest provisions the title of "naval program." In fact, this project is insignificant. Moreover, the money which it requires might have been saved if at the time the maritime clauses of the peace treaty were established we had not been so stupid as to accept our allies' decision, consisting in destroying the German and Austrian fleets.

Mr. Georges Leygues, who was minister at the time, obtained after many efforts the authorization to keep, without destroying them, a few cruisers and submarines. These are excellent units. Had we kept more of them, had we not yielded to this folly of destruction, we would not be obliged to build ships to-day. We might have spared one or two thousand millions, which we are now going to spend.

However it may be, we shall really have a "program" only when the naval program shall have been thoroughly studied in its full amplitude, and not in a piecemeal and reluctant manner, not by observing through the wrong end of the telescope.

At the present time the United States and Japan are the sole nations which possess a program consisting, without taking into consideration, so to speak, the experience gained during the war, in the construction of battleships and battle cruisers, which gradually are assuming a larger type, with a progressively heavier armament.

England meditates and examines the situation. The British Admiralty has understood that which is most evident, i. e., that a battleship should be invulnerable, or practically so, to submarine or aerial torpedoes, else it has no raison d'etre. The reign of the battleship, according to prewar conception, even as now conceived by the Americans and the Japanese, has come to an end. A torpedo from a surmarine or an airplane gets the mastery over a battleship with too much facility, it must be admitted. On the contrary, if a battleship undergoes such transformations as to enable it to face the submarine and aerial perils, this means the rehabilitation of the first-line battleship, of the *man-of-war*, so called on the other side of the Straits of Dover. But what is this first-line battleship going to be? At the present time we can not form the slightest idea relative to it. It is possible that it may present none of the characteristcs of the old battleship; perhaps even it will be possible for it to

navigate in the submerged condition; perhaps it will be suitable for aerial navigation. Who can tell?

What is certain, what is well known, is that the battleship we possessed previous to the war, or the battleships which the Americans and the Japanese have built since the war, have lost the game. These means thousands and thousands of francs swallowed up unnecessarily.

Until such time as it may be—this is a fine matter of investigation for our engineers—a type of vessel having no fear or little fear of submarines, mines, planes, it is prudent for us, our country having financially suffered so much from the war, to undertake nothing to this regard, but to wait.

But our navy can very well take the first place amongst other navies, acquire incomparable fame, render the French nation powerful and respected, if it develops, in a firm and resolute manner, its submarine and aerial flotilla, in order to give them the very first rank.

At the present time "the submarine and aerial activities of our navy are practically nil, the credits allowed being very far from sufficient," says an official document.

We should obtain, as soon as possible, the hundred submarines which were asked for six months ago; we should also obtain a complete aviation squadron and a complete coast aerial flotilla. This is a program, a real program, that would be of slight cost and would furnish most appreciable results—a rational program, conformable to French genius.

Cruisers are going to be constructed; that is all very well. But, at least, is it intended to equip them with scouting and fighting planes?

Is it our desire to abolish the past, to have recourse to new arms?

The time has come when it is necessary for us to arrive at a decision. Either follow the beaten paths, commit the same errors as in the past, or look toward the future, draw up the plans of new war engines, since it is to be feared that the peace which has cost us so much is not to be an eternal one.

The above article shows the difficulty the French are experiencing in settling on a naval program. The Government feels that in view of the depleted condition of its exchequer it must be very careful in drawing up its program. It is quite probable that the construction to be authorized for 1921 will be 3 cruisers, 6 destroyers, 12 torpedo boats, and 12 submarines. It is not very likely that the keels of these vessels will actually be laid this year.

GERMAN ARTICLE ON THE NAVAL WAR.

Source: Reliable (German Press).

(14572.)

January, 1921.

1914–1921: Two simple numbers, only two mileposts on the roadway of the world's history, and yet how much all that lays between them signifies for us, for our country, and for Germany's naval repute. Impelling is the one monument, decorated with arms and weapons; a broken pillar, rooted in fresh graves and arising from a devastated field of lost hopes—the other.

Our thoughts go back to those days of June, 1914, in which a group of the newest English ships were our guests in Kiel and to the hours

in which we with our English guests visited the corresponding types of ships and, with beating hearts and justifiable pride in German technical ability, compared our newest battleships with the British. Our recollections also go back to that day on Kiel's playground in which we realized with a certain happy astonishment that the long-celebrated superiority of the English crews in sportsmanship as compared with our own (an effective gauge for ability in a vocational way) had become a myth in spite of the very short time in which our very busy life had allowed us to devote ourselves to sport. We formed our conclusions at that time; equal to the first sea power of the world in the quality of materials and at least not inferior to it in the ability of the personnel.

What a sight, what a memory as in July, 1914, the German squadron, coming from the East and North Sea, gathered near Skagen on their last journey in time of peace preparatory to the trip to Norway, and then after a short time returned home, and after a temporary separation anchored in the Wilhelmshaven roads, and with a deeply moved but earnest, serious enthusiasm received the mobilization order which opened the war.

Admiral Scheer only speaks the truth when referring to this time in his book, "The High Seas Fleet," wherein he writes: "We were at that time perfectly cognizant of the seriousness of the situation and that it would now mean a battle in which an honorable foundering might perhaps be the only prospect." The German fleet of 1914 really carried not only on the lips, but also in the heart, that which its members had so often expressed with such glorious applause on patriotic occasions—the solemn desire for victory or death. Many of its members have evidenced this through their deeds. Only after a four years' blockade behind stream barricades have the mutilating influences from the inland and a well-paid and well-directed Northcliffe propaganda succeeded in burning out this will for victory from the German crews.

The German fleet of 1914, constructed through hard labor and developed by its genial founder in the space of a bare two decades into a world factor, was not anxious for war and never at mess time had ever drunk a frivolous toast to "the day." And even as little as the German Government had it ever considered a conquest of the world and an attack on England. But the open or secret antagonism of England everywhere in the world, as the English press occasionally signified, was fully reckoned with. It had never had a thought, as the late Lord Fischer stated in his memoirs, of attacking the commercial competitor in his own harbors. It had not prepared secretly for the World War and had not already for years back set the date of the outbreak for August, 1914, as the former First Lord of the Admiralty claimed. But it was always perfectly clear as to its pur-

pose and it raison d'etre. It recognized the British envy at our almost fabulous economic advance and realized the pressure of the English administrative posts, which continually feared that a united Europe, cognizant of its true interest, and under the leadership of a Germany also powerful at sea, would take a course not desired by England. The fleet of 1914 believed in Germany's right to sea prestige and economic freedom. It also realized what the economic fate of the laboring classes of Germany would be if British jealousy should succeed in preventing Germany's development into an industrial State. However, no one in the German Navy undervalued the British opponent as regards the number of ships, the ability of the personnel, or its tenacity to its ideal. Before the war and even during the war itself, we did not pay sufficient attention to Mahan's saying, "The possession of an unlimited power, as illustrated by England's sea power, was never accompanied by a deep recognition of the rights of others." We only first recognized how true the American naval teacher was when we saw England's treatment of the neutrals, her violence to all the preconceived conceptions of international law, taken in their entirety. We were too care free, too trustful, and too frank.

This German fleet of 1914, still incomplete in the squadron organization and formation, insufficiently supplied with personnel and reserves, without any famous traditions and any real war experience, lacking in its constituent parts the real seaman's spirit which can only be gained by repeated ocean journeys, splendidly drilled in a military way, completely self-taught as far as concerns war discipline, use of weapons, and leadership, was anxious in this war, which had been forced upon us, to stand as an equal on the side of the laurel-crowned German Army and to show the German people through its deeds that these instruments of war, constructed at the expense of milliards and still somewhat strange in its art and form to the country itself, was equally as necessary as the army in order to help Germany to retain, during a war with England, the place in Europe and the world which through its industrial activity and the ability of its inhabitants it had known how to attain and which England contested.

It is unequivocally admitted by competing navies and by our enemies that the German fleet of 1914 was as equally first class an instrument as the British; that it possessed an unrivaled spirit; and the American Admiral Fiske, certainly giving a nonpartisan judgment, stated that, measured by Coronel and Skagerrak, not only the German ships but also the crews who fought on them equaled the English in ability, if they did not even surpass them.

In spite of everything, in spite of a considerable number of heroic deeds of greater or lesser magnitude which were performed by fleet,

squadrons, and individuals, in spite of all the deeds on all the oceans which can not be passed over in silence by the conquerors' historians, in spite of all the sacrifice in blood and lives over and under water, we stand to-day with bleeding hearts before ruins, before the open grave of all the German efforts toward sea supremacy, and see ourselves thrown back to a time of powerlessness on the sea, of political and economic dependence, and in a situation which to those who still live in the proud memories of 1914 is always more and more incomprehensible and inscrutable.

It is therefore quite comprehensible that many persons ask themselves the question, which is prompted by bitterness, "Must this now be the end of all our honest, industrious labor and our righteous efforts: was it really inevitable that the battleships and cruisers, proven so often in heated battle, and the submarine flotillas, which had become the terror of England, should make this ignominious journey (formerly considered so impossible) to British harbors under the command of the same officers who formerly stood victorious on their bridges, and this represent the end of everything which formerly was our life's purpose and firm conviction?" In 1848 Germany's many fantastic hopes for naval supremacy were smashed to bits under the auctioneer's hammer of Hannibal Fischer. Have we really earned it, that the fleet begun in 1900 with such great hopes should end with this moving-picture spectacle in parade array for the benefit of our enemies, so filled with hatred? Wherein lies our negligence or our fault that we must inevitably accept this fate, this particular fate, with gnashing of teeth and clenched fist? We have the right and the duty in earnest self-examination to draw comparisons between then and now. We may well ask such questions and must find answers for many puzzles that time brings up to us. If we do not do it ourselves, then the very stones themselves should begin to speak in order to proclaim the horror of it all and to show us what has happened to us. The "Marine-Rundschau" will be called upon to help bring about an answer and solution to this bitter "Why" through the mutual exchange of opinions. But it is wrong to occupy ourselves exclusively and permanently with fruitless reflections—

> To float forever in memories
> As a withered leaf on a tree—
> Take care! Only that is life
> When thy to-day has a to-morrow!

We can search into the past, but at the same time we must believe and work—and hope. We must believe in the reconstruction of our native land, and the longing of the German people for sea freedom and naval supremacy which results therefrom. The time will come when the murmuring of the sea will be more distinctly heard by us

than it is at the present time. We must all cooperate in this reconstruction, each one in his place, with advice and deed, with the spoken and written word, and with heart and hand. The action must, however, always take first place—it was, and is, the beginning of everything. We may *hope*, because German history and the political and our personal efforts for naval supremacy are an illustration and a reflection of the fact that the fate of the Germanic people has always moved in sharp curves, sometimes toward the light, and then, again, close to the depths. As changing as the tides that foam along our coasts has always been the happiness and unhappiness of the German people. We must believe and hope in our work, for without this we would do a wrong to all those who, during the war in the proud fulfillment of their duty, staked their lives for our future hopes. It is our duty to hold rigidly to this belief in the return of better times as a holy testament and an honorable tradition. We must feel ourselves as the connecting link between a proud past and a hopeful future and must be the bridges between the former times and those to come. We can confidently hope, because the recollection of so many heroic deeds and successes will be rightly our saviour and a protection against the attacks of gloomy doubts and despondency.

In this connection I can greet nothing more warmly than the previously mentioned book written by Admiral Scheer, the highly esteemed naval leader, in which he has left us a permanent monument to the High Seas Fleet, which he commanded so successfully. Let us give more such books to the German people, and especially to the young generation which is growing up—books which endeavor to present the positive side of the accomplishment and places it before all critical considerations. The High Seas Fleet is not the only favored element. Admiral Dick and Capt. Pochhammer have written valuable books on the last journey of the cruiser squadron; Count Luckner has given us his splendid work, " Seeteufel," which every German boy should read; Capt. Nerger recounts the deeds of his *Wolf* and *Wolfchens*, but there is much more to be told in connection with the individual deeds of the auxiliary cruisers and cruisers themselves. There is still no detailed and comprehensive work, written in a form intelligible to the active soldier and the layman, describing the events in the Mediterranean, by the Dardanelles, and in Flanders, and in all the places where the members of the German Navy fought and succeeded under the old flag. Admiral Vollerthun has recently written a work of permanent value in regard to Tsingtau and its heroic battle, the hopeful and expectant naval colony that was so dear and valuable to us ever since we have known it. The entire submarine commercial war, its complicated relation to higher politics and the events on land. also needs a com-

prehensive and generally intelligible handling. How serviceable it would be if there was such a book, compiled from unobjectional official sources, which could serve as information and guide for the public opinion on the occasion of the impending process against submarine commanders before the imperial courts. Many private notes on heroic deeds still remain unprinted in chests and cupboards. In America and England there have always been authors, such as Cooper and Marryat, who, after great military events, knew how to weave them into sea romances. There is a score of material on hand. Is there anything more romantic and more suitable for youth than the adventures of the *Ayesha*, the *Seeadler*, or the auxiliary cruiser *Wolf?* Let the poets come forward, is our cry to-day. Let them teach the youth the love of the sea and the seafaring life, and teach them to hold this love. What a dreadful loss that a Gorch Fock should fall a victim to the war. There is no lack of material, for between the two mileposts of 1914–1921 the old navy has raised guide-posts that would show even a blind man the way and which even a Scapa Flow and a Versailles peace can not obliterate.

The pages of naval history have acquainted us all with the deeds of de Ruyter, the conqueror of the Thames; Rodney, the line breaker; Nelson's victories at Aboukir, Copenhagen, and Trafalgar, breathing the spirit of English daring. We are all familiar with Suffren's brave battles and strategically technical expedients in India, the individual battles between the American and English frigates in 1813–14, and the piratical voyages of numerous French, English, and American cruisers. Farragut's famous "Damn the mines, full speed ahead!" rings clear in all our ears, and we read with enthusiasm of the often overvalued "cutting-out" actions of English cutters and brigs. I ask, is there any one of these deeds that does not find a parallel or an accord with one of the actions of some German commander, battleships, or submarine in the late war, no matter however monotonous and uneventful the German naval war for the four years might appear to the layman?

Did not our flotillas repeatedly and successfully run into the sharply proven jaws of the lion in the Downs and the Canal; did not our cruisers and submarines attack unpunished the English coast defenses and industrial plants with their shells and in this way carried the war's terrors directly to the sacred shores of Great Britain; did not the blow of the line ships, cruisers, and torpedo boats of Admiral Scheer scatter the British line before Skaggerak, which was drawn up by chance and not as a result of clever leadership, and which stood at our very gate and far exceeded us in number? Has not Lord Jellicoe himself in his official report of the Skaggerak battle praised the material and personnel of our fleet in the very highest terms? Has he not admitted that in many points we sur-

passed the English fleet? Has he not conceded that the consideration of our ability obliged him to use the very greatest care since the world-famed British seamanship lay in the balance? Was it not the spirit of Nelson's often-famed spirit of offensive which was so greatly missed in the enemy's ranks, which inspired the German commanders to guide their far smaller fleet as many as 30 times into the very center of the North Sea and onto the very coasts of the enemy, and that in 1916, only two months after the Skaggerak battle, took them to Sunderland, and in 1918 up as far as the Norwegian coast?

Should we not be every bit as proud of the ability and independence of Count Spee, left to his own resources in his romantic journey in the South Seas, of his victory at Coronel, and his heroic death near the Falkland Islands, as the French are of the decision and ingenuity of their Admiral Suffren? Did the officers and crews of the various ships of our cruiser squadrons and other individual ships and submarines fight any less bravely than the captain of the American frigate *Chesapeake*, whose last words, "Don't give up the ship," became a universal slogan in America? Did the *Blucher* go down fighting any less bravely than the French *Vengeur*, so celebrated in word and picture? Did not the crew of the *Ariadne*, *Coln*, and *Mainz* go down with an almost classic heroism and one recognized by the English historians? Is not the battle between the *Sydney* and the *Emden* not every bit as noteworthy as an historical naval event as the battles between the frigates *Constitution* and *Guerrier* and the *United States* and *Macedonia?* Have not the Admirals Schmidt and Behncke, up by Osel, and the commanders of our groups in the North Sea had almost daily opportunity of exhibiting an indifference worthy of Farragut in the face of the ever-threatening mine danger? Were they not superior to the English commanders, whose maxim was always a dread of German torpedoes and mines? Do the pages of history show any more successful or braver voyages of commercial destroyers than those of the *Emden*, *Karlsruhe*, *Möwe*, *Meteor*, *Seeadler*, and *Wolf?* Did not our merchant-marine destroyers perform as great or even greater deeds than the much-renowned American *Alabama*, *Sumpter*, and *Chasseur?* Have not our submarines shown more than a hundred times in the Canal, around the coast of Ireland, in the Mediterranean, and near Funchal, in spite of the stupendous counteraction of the enemy above, under, and beside us, that the German seamen were not surpassed by any in manly courage and the spirit of sacrifice? Did our naval officers, gauged by the journeys of the cruisers and submarines into foreign waters, lack any of the true "sea instinct" claimed by the British, or did our engineers lack in technical knowledge?

The English may continue to try to depreciate in a critical way the deeds of our submarines that brought the British economic life to the very verge of destruction and almost brought us victory, because to them the submarine as such is a very uncomfortable weapon. England will never succeed in making the brave men who commanded our submarines and astonished the world with their deeds appear any the less as heroes and as real seamen. A later and more justly thinking time will give quite another opinion of the submarine as a weapon than the prejudiced English conception. Not long ago the Revue Militaire, the organ of the French navy department, wrote: "It is high time to discard all the false opinions in regard to Germany's use of the submarine. The commercial submarine war was absolutely justifiable. It is also time to give up the idea that Germany's use of the submarine was contrary to international law. This false view, circulated during the war, could do great harm to our own national defense in the future. It must be unreservedly admitted that the German high command only made use of their own proper rights when they employed the submarine as a means of bringing about their final victory. It must be maintained, therefore, and most energetically so, that, in spite of the protests during the war, the use of the submarine was entirely justifiable. It is also completely erroneous to require that an enemy ship should be warned before it is torpedoed, as one claimed in the early days of the war. In this regard the whole thing rests on the basic principles of military strategy in which there can not be the very slightest doubt for those who must bear the responsibility of carrying on a war." And even in England itself, the original ideas have undergone a change. The United Service Institution has rewarded the work of a sea officer with a prize who designated the marauding submarine as playing the first rôle in future wars. One begins to grasp the fact that the submarine can no longer be put aside as a weapon, and an effort is now made, after the war, to seek excuses for including it in the English naval politics.

Have not the mine searchers in the Gulf of Riga and in the death field inside the German Bay performed deeds in the course of their quiet, little heralded, but highly dangerous daily work which are the equal in endurance and manly courage of any deeds celebrated in naval history? Do not the heroism and spirit of sacrifice of our aircraft crews, the "flyers" in Flanders, at the Dardanelles, and in Tsingtau, deserve the very highest recognition? Have our soldiers in the Dardanelles and in Flanders less right to a place in history than the English and Hanoverians, who in Rodney's time successfully defended Gibraltar, or the troops who during the time of Nelson were landed at the mouth of the Nile? Did not our seamen of the *Konigsberg* and *Mowe* so cut off from all the rest, and the de-

fender of the Rufidschi Delta, Capt. Schonfeldt, with all their limited means, perform as notable deeds as the Americans in the War of Independence on Lake Erie and Lake Champlain? Lettow Vorbeck in his splendid book has done special honor to the German naval fighters, and most justifiably so. Yes, Admiral Scheer is correct when he writes: "However low we may have sunk to-day, we do not need to be unjust to that which has been accomplished." Certainly, we have lost the war finally, and have been obliged to deliver over our ships in the most humiliating way. Nevertheless, in so far as the front itself is concerned, from the very first day of the war everyone was ready to fight to the full limit of ships and lives. It is not their fault if higher politics or the hesitation and procrastination of the enemy have no opportunity to fight. But whenever fighting *did* take place the navy has done so with distinction. That it was absolutely inevitable that everything should end in the way it did, I do not believe. The course of the war might have been quite different. We were not up and stirring enough and depended too much on the theory that the enemy would do as we wished. That we were correct in expecting that the enemy fleet would immediately give the Nelson signal, "On to the enemy," has been recently admitted by the Daily Telegraph. Lord Jellicoe's astonishment expressed in his book on the "Great Fleet" as regards our inactivity is incorrect considering the conduct of the British Navy. The expectations of his patron, Lord Fischer, who saw in Jellicoe a second Nelson, very bitterly deceived the British leader. "We have been neither Napoleonic in audacity, Cromwellian in thoroughness, nor Nelsonian in the conduct of the war," wrote Lord Fischer in his memoirs in 1916.

England's "sea power," with all its imponderabilities and various elements, whose chief power lay in prestige and a certain bluff, combinations before which our political and military direction was more than helpless, had the victory over us in the end; to them we had to deliver over our ships, disarmed by ourselves but still unconquered. The Grand Fleet itself, however, added only a few poor leaves to the laurel wreath bestowed on British sea power in previous wars. The Manchester Guardian and other English newspapers have very recently, on the occasion of the publication of the English report on the Skaggerak battle, criticized the exaggerated hesitation of the English fleet, so contrary to tradition, and referred to the loss of future prestige resulting therefrom. It would be elementally wrong to conclude from the wailing, unmanly, and pacifistic sentiments that to-day fill the major part of the German people that our entire navy was an error. In the September issue of the Grenzboten, Prof. Salomon in a very telling way has again convincingly pointed out that our entire prewar politics, including the naval construction, was absolutely necessary on account of England. How close we stood to

victory in spite of the inactivity of the fleet, I have recently heard from a man who a short time previous had the opportunity in America of discussing the matter with American personalities: "Neither France nor England could have lasted through the winter of 1918–19, and even America was not in a position to finance the war for more than a year. To us Americans it is absolutely incomprehensible that you Germans should have considered for a moment the armistice conditions of the autumn of 1918."

But the reason why the thing ended for us in such a catastrophic way is perfectly apparent. In one case we lacked a real equivalent to a notable deed in British naval history. When Sir John Jervis in 1798 put down the mutiny in the Mediterranean fleet through the force of his dominating personality and forcibly obliged the crew of one of his line ships who had attacked the officers to pronounce judgment on their own ringleader and at a stipulated hour to hang him on the yardarms with their own hands, he raised his hand to his cap after the execution and said movingly, "The discipline is saved." History has rightly given a greater value to this moral victory than to the success at St. Vincent. At that time also in the canal fleet Lord Howe succeeded by means of proper measures in downing the mutiny. I perfectly understand that the situation at that time was quite different from what it was with us. England's sympathies were not with the mutinying fleet. Nevertheless, we lacked a Sir John Jervis in 1918. One can try, as Admiral von Trotha has done in the Grenzboten (No. 44/45), to explain psychologically the mutiny in the fleet in 1918. The blot on the German fleet in having broken the oath of allegiance in a critical moment can not be wiped out in this way, and it can also not be sufficiently explained as to why suitable precautionary measures could not have been taken in time or why the treason of the mutineers was not dealt with to the full limit of the law. As hard as it may be, and as correct as Admiral Scheer may be in his first criticism of the naval mutiny of 1918, which Noske, among others, absolutely condemns in his book "From Kiel to Kapp," here also time will spread her veil of forgetfulness. An oath is an oath, and the breaking of such in the moment of the country's greatest need can never be subsequently justified in positively any way whatsoever. But in the long run not even the recollection of this shameful time can prevent the reconstruction; it all must be overlooked in the consideration of greater things. Time will render it necessary, the country will need it, and our future naval distinction will depend upon it.

The olden times will never return in their entirety. The world's clock can never be set back. In the reconstruction of our sea power, new forms must be sought, supported by the indisputably good points

of the past. The present German Navy, following the spirit of the time, is constructed on democratic principles; under the existing circumstances, account must be taken of everyone who, true to his conception of the oath, wishes to serve in the navy. But on every ship and in every squadron only one person can be the responsible leader; all the others must be subordinated to him unequivocally. The duty of responsibility gives every commander corresponding rights. These are elementary, unalterable principles of military seamanship and everything connected with it. The irreparable come down to us from well-proven old Prussian traditions has been lost to us through the evolution of things. The relationship between superior and subordinates must be arranged in the future through a new and yet old Germanic factor—the loyalty, the devotion of the soldier to his flag, the confidence in the leader tried in every situation, the reverence of his mental superiority evidenced by his ability. Between the different corps and the service divisions of the new German Navy a mutual respect of leadership and ability will prevent all mistrust and will naturally preclude all presumptious vanity. From now on, all training for leadership should strive in the first place to attain character building; the leader's firmness of character is the first thing that bends the will of the opposing subordinates. This has often failed the German people before and during the war, and, in the last analysis, was the cause of our defeat.

For my own part, I have long been unable to understand that naval officers could be found in November, 1918, who voluntarily undertook the carrying out of the shameful armistice conditions. It was also very difficult for me to grasp the fact and the reason why honorable men of proven ability in the war, in spite of everything going to pieces, were found ready to stick to their posts in order to save what was yet left to be saved. I discussed this matter at length and in great detail with Admiral von Reuter, a classmate and friend of 35 years, after his return from captivity. He helped me to understand why he and his comrades took upon themselves the difficult sacrifice of taking the German ships to Scapa Flow.

He who now has the thorny post of directing the reconstruction must have the confidence of his subordinates to a far greater degree than in former times. Whoever wants to be a fellow worker and laborer in the difficult work of reconstructing the navy must lay aside all self-independence, all self-respect, and fault-finding, and only keep the thought of how the cause can be furthered. In the light of the above, the officer corps, and especially the marine officer corps, to which I would ascribe very high duties, should henceforth lay down for themselves the self-imposed law of obeying in the best sense of the word all those who are at the head of the navy. The discipline

and self-discipline of the officers' corps should manifest itself in a code of living and service such as was cultivated formerly in the olden times of the knights and for which the old Prussian officer corps were noted in their best days. A disciplined officer corps is the basic condition for a disciplined navy. For a long time to come as little as possible should be said of the new German Navy, which quietly arises in places and waters that were the cradle of the vanished great fleet.

The inclusion of a new form of cruiser in the first navy plans I consider as a happy indication that the present government of the German people is deeply impressed with the necessity for Germany not to relinquish the idea of sea power. The hasty resumption of the foreign service is unavoidable if the navy is to flourish. "The farther a navy keeps away from the caserne, just that much healthier will it be." A purely coast navy is no navy. We need the invigorating breath of the real sea breeze.

I take it as a good, healthy sign that the "Marine Rundschau" has again come to life. In spite of the small size and insignificance of our present navy, it will nevertheless soon gain the respect of the other navies in a technical way. German science still stands high in the world (perhaps the only science having this honor). The "Marine Rundschau" has great tasks to fulfill. Many still unsolved questions of the war, which will have a burning interest for all those who took part in it, will be discussed in this paper's pages. A great quantity of material of general interest which has yet been untouched has accumulated—material touching all subjects, the strategic, tactical, technical, and medical. Besides such purely technical essays, the resuscitated "Marine Rundschau" should also interest itself in devoting attention to the purely personal experiences of the war.

How many generally interesting events and heroic deeds in which the individuals had their opportunity of distinguishing themselves still slumber undiscovered in the journals of the navy archives. History is made up of deeds of individual men, and from these threads the loom of time weaves the general picture. Nothing will be so useful to the German Navy of the future and to its personnel as the fact of the coming generation learning from the deeds of those who took part in the war and their taking these deeds as their pattern. Plutarch was always the textbook in constant use of all the great men of history. We shouldn't allow ourselves to stick to the sole idea that the peace treaty has only left us a few ships that are really not battleships in the modern sense of the word. I purposely pass over their nature and number. It is not the ships that fight, but it is the men, and to-day so much does not depend on the material as on the spirit which will come over to the new fleet from the old. As

the construction of a German fleet was attempted in 1848, ships could be bought for gold, but there was a complete lack of experienced German men to man and guide these ships. We must now cull all the experiences and knowledge from the past which are yet to be saved. And these experiences are more effectively embodied in the individuals. These persons must hold the places for the coming generation. When a burning house falls it seems to everyone to be the simplest of things to build a new one on the place of the old. Using the fragments on hand for the reconstruction of the new will only be done against our wills. New construction is always better than patchwork—this has always been an old maxim. But the enslaved and impoverished Germany of to-day lacks material and the power of building a new fleet such as we had so hopefully in 1898. We must be modest and must seek a corner stone from the great granaries of the past in order to arrive at our goal. The labor is tedious and the task is a great one.

Although our merchant marine is nothing to-day—just a beautiful memory, but the men at the head of our great steamship companies have industriously and successfully sought ways whereby they might help to replace again the German merchant marine flag on the high seas. All our sea interests which the old fleet was to protect have become insignificantly small. But among the leading men in commerce, shipbuilding, and industry, and also among the emancipated laboring classes to a growing degree, the opinion is already gaining ground and there is already the confidence that the times will again change, and that after the abrupt descent, an ascent will and must follow. Where there is a will there is always a way. With the reawakened national consciousness and the resuscitation of sea interests, the sea power of the German Empire will become a generally felt need. Commerce will precede; the flag will follow. The navy has always been, and will always be, the purest expression of the natural sentiments of the German people.

The times are full of latent events and possibilities. No one can look into the future. But in so far as one can foresee it would appear as though from now on "sea power" will more than ever determine the aptness of a people who desire to be active coworkers in the history of mankind. This fact stands firm: The small German fleet must be restricted to the limited form allowed by the peace treaty. The world must not forget that there is still a German fleet. To give up voluntarily the belief in Germany's vocation to take part in ocean transportation and the freedom of the seas would signify an abiding recognition of our helplessness. The oppositions are many, the restrictions great. Only men with wills of steel can remove and overcome them. The rallying cry of the German Navy of 1921 must be, "For a' that!"

THE GERMAN NAVAL MUTINY.

Source: "Deutsche Wehr."

(9354–A.)

20 November, 1920.

THE OUTBREAK OF THE REVOLUTION.

"The Beginning of the Naval Mutiny Two Years Ago," by Lieut. Friedrich Fikentscher (retired).

On October 29, 1918, the entire high-sea fleet received orders to assemble at Schillig Roadstead.

It might have been for practice, as had often been the case during the four years of war.

As a matter of fact, a night attack against the parts of the English Fleet standing off the Belgian coast was to be made by our light ships supported by the larger ones.

The officers as well as the commanding officer were in complete ignorance of the plan of operations, which, as usual, to prevent betrayal, was kept secret. The crews, however, looked upon the preparations with anxiety and anger.

The leaders of the revolutionary agitation knew how to take immediate advantage of the opportunity. They had been informed by spies of the proposed undertaking and they succeeded in representing it as a premeditated act of desperation by which the fleet was to be sacrificed. In a few hours the most insane reports were sent out from Wilhelmshaven and disseminated among the greater part of the ships by men who had been on furlough, by post orderlies, or by other messengers. The "Pan-Germans" wanted victory or the destruction of the fleet with the Kaiser on the flagship *Baden*, at the head of his squadron ready to die a hero's death and with the officers having said a last good-by and sworn that they would fight to the last gun. Any report, however insane it might be, was eagerly believed by the excited people.

A state of indescribable confusion and despair prevailed among the crews. So near death, so near death. The instigating and disturbing elements demanded with boundless fury that the ships be prevented from going out and succeeded at once in winning all the timid and stupid over to their side.

The object of these reports was completely attained. Difficulty arose even while taking some of the ships out through the locks, as a part of the crews offered passive resistance. When, on October 30, the order came to weigh anchor, the engine-room personnel of several ships decided to refuse to work and to put the fires out off Helgoland at the latest. This did not take place because on two of the ships sabotage had already made it impossible to weigh anchor. The mutineers banded together and barricaded themselves under cover of darkness. On the following day the majority of the rioters (from

the *Thuringen* alone about 400) were captured and forcibly detained ashore.

The progress of events on the *Thuringen* was fatal for the spreading of revolutionary movements in the fleet. The ship was lying in Schillig Roadstead with the first squadron, when on the evening of October 29 resistance developed on board with amazing suddenness.

Apparently the signal therefor had been received through the traffic steamer which visited the ship every evening.

One of the ship's boats was to be made ready at 10 o'clock to fetch secret orders from the flagship. The crew anticipated trouble and only a part appeared on deck for the maneuvers; it was only with great difficulty and considerable delay that the boat was made ready.

On the morning of October 30 a great part of the crew simply remained lying in their hammocks. At about 8 o'clock the order, "Make ready to put to sea," was given. Instead of performing the necessary work for the execution of this order, the men gathered in the forward battery and in the large space under the forecastle, singing reservist and folk songs.

In order to get the crew under control the commander ordered inspection by divisions.

Reluctantly the men appeared on deck, many obeying only the orders given to them directly by the officers. In the meantime, under the pretext, or possibly due to the fact of the bad weather, the sailing was postponed.

The service of the day proceeded without special incident but under mutual distrust.

An absolutely unprecedented state of mind, a mixture of suspicion, malevolence, uncertainty, anxiety, and the determination of despair seized the crew. Petty officers were powerless against it. For days the officers endeavored to find the cause of the inexplicable behavior of the crew, up to that time one of the best in the fleet. They questioned the men separately and received meaningless and evasive answers. There was something uncanny, something elusive in the air. Evening brought a twice issued and twice countermanded order to "Make ready to put to sea." As if by agreement, a large part of the crew, seamen, and stokers hastened forward simultaneously at the first issue of the order from different quarters of the ship. In the forward battery, through which the anchor chains pass, the resistance was organized; the tackle was cut, thus making it impossible to weigh anchor. Unseen hands here and there put out electric lights, leaving the forward battery in complete darkness, so that all the officers' efforts to restore order and to capture the ringleaders were unsuccessful. A sinister, apparently determined, highly excited crowd stood, sat, or reclined in the forward battery and cut in off from the

other parts of the ship. Even after the "Make ready to put to sea" order was issued by the commander of the fleet the mutineers remained together holding council. The agitators, with seditious speeches filled with catch phrases and promises of peace, urged on those who were still vacillating. They made it clear that there was now no drawing back. Until long after midnight the turmoil was kept up and increased by fanatic lies and plenty of drink.

Nevertheless, during the night it was possible to man the watch and stations with those members of the crew who had remained faithful. The officers, fully armed, stood at their posts in the stern ready at any cost to prevent the advance of the men to the vital parts of the ship. At about 3 o'clock the commander of the squadron went on board and had a long conference with the captain of the ship in the latter's cabin.

The next day, October 31, the anniversary of the Reformation, the crew as well as the mutineers appeared on duty apparently in the most penitential mood.

The officers were impatiently awaiting the action of the authorities, which, if everything were not to be lost, must be taken with the inexorable severity of martial law. Finally, at about 12 o'clock noon, the captain gathered all the officers around him and informed them of the plan of the fleet commander.

After dinner the signal, "Be ready for sea at specified time," was again received from the flagship. The order had not yet reached the cabin when the mutineers of the day before rushed toward the bow. They once more barricaded themselves in the forward battery to repeat their cowardly and traitorous acts. They had scarcely shut themselves up in this place when all the exits, bulkhead doors, and hatchways were occupied by officers. At the same time a steamer from Wilhelmshaven stationed herself on the port quarter of the ship, bringing a detachment of marine infantry, chiefly elderly, bearded men. The marines with guns at "ready" were immediately distributed to the different parts of the ship. The commander, who, with several officers stood on the forecastle, had the hatchway leading to the foreward battery opened by force and in plain words ordered the mutineers to come on deck. This was met by wild shouts from the ringleaders and by anxious silence on the part of the crowd of misguided men. At the sight of the menacing revolvers and gun barrels the mutineers crouched back into every corner and angle of the dark room.

In the meantime two torpedo boats had come alongside, from one of which the commander of the squadron came on boad. A third large torpedo boat, cleared for action, with loaded tubes and the men at their guns, stationed herself 200 meters abreast of the bow. A submarine had likewise arrived and lay ready to fire.

On the battleship *Helgoland*, 500 m. distant from the *Thuringen*, the crew was seen standing closely crowded together at the railing and some of the casemate guns were kept threateningly pointed at the submarine until the order "Guns in position for securing" and the 30.5 cm. after turret of the *Thuringen* trained on the *Helogland*, put an end to the dangerous appearance of things (dangerous in appearance only for the reason that the mutineers on the *Helogland* did not have a single round of ammunition at their guns).

The men on the *Thuringen* wanted to have a "talk" with the commander, who, as a matter of military precaution, demanded unconditional surrender. The repeated demand for the men to come out one by one remained without result. In the meantime a quarter of an hour passed.

The eyes of the entire fleet were turned toward the mutinous ship. Finally the redeeming order "Break resistance by force" was issued from the squadron. After having permitted a sufficient interval of time for a final consideration to pass, the commander ordered the forecastle cleared. The torpedo boat received instructions as to which part of the ship to fire upon, when at the moment of greatest tension, there appeared before the commander a small, plain-looking sailor, one of those who had remained faithful (he was the commander's orderly), and modestly asked whether he might try to persuade the mutineers to leave the forward battery so that bloodshed might be avoided. His request was granted. He bravely climbed down the companionway leading to the forward battery, stood in the midst of his excited comrades, and addressed them in his Hamburg patois.

Two minutes later the little sailor reappeared on the forecastle and with a happy smile said: "They are coming." Upon this the torpedo boat received orders not to fire. The marines formed a line from the forecastle to the afterdeck, where the steamer lay. The mutineers emerged one by one from the hatchway and were placed aboard the steamer.

As the vessel with the insurgents and their escort drew off, the crew of the *Helgoland*, who had watched the course of events on the *Thuringen* under the greatest tension (the *Helgoland* had also been prevented going to sea the evening before), broke into three wild cheers, which were answered by the mutineers of the *Thuringen*.

The heart of every honorable marine and sailor, not of the officers alone, stood still at that moment. Almost paralyzed with amazement, the crews of the torpedo boats and submarines listened to the cheers of the mutineers and could hardly grasp the meaning of the unprecedented occurrence. Could it have come to this that in the German fleet the crew of one of her ships could with impunity cheer a crowd of mutineers?

The discipline and honor of the navy were at stake.

Three, four torpedoes against a mutinous ship could have saved the morale of the fleet and protected Germany against shame and ignominy. A decisive, manly leader was needed. The man, the decision, the leader were missing. Had the spirit of Frederick the Great vanished utterly?

About 150 men were brought ashore from the *Helgoland* and were taken with the men from the *Thuringen* to Oslebshausen, near Bremen, and to Fort Heppen, near Wilhelmshaven. *One short week later these same 500 men had started the revolution in Bremen, Hannover, and all through northwest Germany.*

After the mutineers had been removed from the *Thuringen*, new divisions were detailed to fill up the rolls.

It is worthy of mention here that the main body of the crew (composed of two-thirds of the original crew) remained completely under control of the officers until November 7. Nor did the newspaper accounts of the outbreak of the revolution at Kiel have any effects. It was only after their arrival at Wilhelmshaven in the afternoon of November 7 that this hitherto faithful part of the crew surrendered to the red frenzy and to the soldiers' councils.

At a stroke the naval authorities, and with them the Government, were confronted by the heaviest responsibility.

It will remain for all time an open question whether, at the very start, in the first days of November, a strong and determined action by the responsible authorities would not have prevented the revolution (that is to say, its outbreak in the navy and in northwest Germany). It should not be forgotten that up to that time only a fraction of the fleet, in fact, only parts of the crews of large ships, had mutinied. The submarines were still lying far out along the English coast at their appointed places, longing for an opportunity to attack; the faithful crews of the torpedo boats were still shaking their clenched fists at their perjured comrades on the battleships; the best of the large ships, among them old fighters like the *Seidlitz*, which more than any other had covered herself with wounds and glory at Doggerak and Skaggerrak, true to their traditions, were performing their duties as a matter of course. Even on the ships where the order to put to sea had been disobeyed the seizure of the ringleaders had not failed to make an impression, so that it was possible to control their crews, who for the most part had remained faithful, with enlightening and pacifying arguments.

Even though the advance of the fleet were thwarted, a great deal would have been gained if quiet had been maintained until the armistice should relieve the tension.

Perhaps—who can decide to-day?—this would have been attained if the entire fleet, during the critical days at least, had been kept at sea, away from the disintegrating influence of the port cities. At

any rate, the first movement of the revolution on November 3 did not originate in the ships, but on land, among the naval elements at Kiel.

With breathless anxiety both the officers and men of the ships awaited during those ominous days the measures to be taken by the authorities. Surely the treatment of the captured mutineers would be decisive. In a vacillating mood the crews waited to see whether the authorities would withstand this test of power. The naval authorities could not, however, come to any weighty decision without the support of the Government, and the Government of Prince Max had neither the force nor the will to oppose the growing movement even at the last minute.

On the evening of November 4 there appeared on the ships hundreds of copies of a Government proclamation, "To Seamen and Workmen," in which, with the announcement that the armistice, delayed through the fault of the enemy, was now imminent, quiet and prudence were advised. The entire tone of the proclamation, however, betrayed the uncertainty of the Government.

When it became known two days later that an order to release the mutineers had been issued, even the youngest seaman must have realized which was the stronger side. Dread and fear of the ruthlessly advancing revolutionaries was now chiefly responsible for the desertion of those who had been faithful hitherto. The officers found themselves betrayed and forsaken on all sides. The continuous yielding of the Government could only mean that, realizing its weakness, the Government capitulated to the revolution in advance. One waited in vain for some vigorous action on the part of the commanding officer of the fleet; but the latter, owing to the unfortunate dispersion of the ships of the fleet, did not form a correct idea of the situation, and under the influence of events at Wilhelmshaven granted concessions which in the case of many vessels had not been requested at all. Under the admonition, "*Avoid conflicts*," *the fleet allowed itself to be disarmed by a minority of shrewd and determined revolutionaries.*

On November 4 and 5 Kiel had her red days, and Wilhelmshaven on November 6.

In Kiel surprise attacks and force won, while gunfire compelled the ships in the harbor to join the movement. On the battleship *Konig* Lieut. Commander Heinemann and Lieut. Zenker met death at the hands of the mutineers in fulfillment of their military oath as they were defending their ship against the hoisting of the red pirate flag. On the streets one beheld the spectacle of old submarine commanders who had risked their lives for Germany on many cruises surrounded by shouting, jeering crowds, insulting and mistreating them.

At Wilhelmshaven cunning and deception won a bloodless victory. There, on the morning of November 6, the officers and faithful crews of all the submarines in port and of many torpedo boats obeyed an order from the commander of the fleet to assemble, in token of loyalty, on the flagship *Baden.* The entire crew of the *Seydlitz* (there were no other large ships in port) was also drawn up behind its commanding officers.

When the military preparations had reached a point which would promise success, the "Confidence Commission," by constantly dwelling upon the absolute necessity of maintaining quiet and order, were able to prevail upon the fleet officers to consent to negotiations, and finally succeeded in putting through the "requests" of the rioters. These requests were moderate and purposely related only to military matters: "The same food for officers and men, abolition of compulsory salute in the city, appointment of reliable men."

When the officers of the fleet, with unconceivable trust in the moderation and docility of the commission, had relinquished every possible means of armed intervention and through its leniency had hastened the downfall of the entire fleet, the "Confidence Commission" transformed itself into the "Soldiers' Council" and from day to day, with ever-increasing demands, strengthened the power it had so craftily usurped.

By means of similar "precautionary" measures the staff of the North Sea naval station was also deceived as to the full scope of its concessions.

Incoming ships were greeted with hurrahs from land and from the ships in port, and by intensive "enlightening activities," influenced and conquered. However, not all the ships were such easy prey. A large number of them, especially the smaller craft, tried to escape the red flags which were waving everywhere on the coast. The fourth submarine flotilla ran out of Emden and wandered for days homeless at sea until lack of fuel compelled her to make for land.

The officer in command of the submarines himself assembled his faithful boats and tried to reach a nonrevolutionary port, but everywhere encountered opposition from land. Individual torpedo boats endeavored to escape from the terror at Kiel, but were fired upon by their comrades. Five submarines preferred to be interned in Sweden rather than to surrender to the red flag. The longer a vessel had been at the front, the more she had fought for the fatherland, the longer did she remain true to the black, white, and red flag.

The new leaders understood in the meantime how to transform the war ports, by means of parades and public meetings, by inspiring calls "*To all*," and by newspaper extras, into a frenzy of joy.

It did not matter what means were employed. Large headlines in all the local papers announced that *Gen. Foch had been ordered*,

and the mendacious story about the English torpedo boat which, under the red flag, had brought to their German brothers the greetings of the English fleet, likewise in mutiny, found credulous listeners everywhere.

By the catchword of world revolution and the universal liberation of the people, they succeeded in overcoming the scruples of the still hesitating ships and boats. The intoxication of liberty reached its climax on the evening of November 10, when a brilliant display of fireworks "in honor" of the German fleet was organized at Wilhelmshaven.

In addition to the proclamation of the Republic of Oldenburg-Ostfriesland on this occasion, the armistice was celebrated as the first result of the revolution. In order not to mar in any way the festive spirit, the precaution was taken to suppress all the evening papers which contained the conditions of the armistice.

While the victory of the revolution was being brought to completion in the navy, the organization took care to spread this destructive movement with whirlwind rapidity throughout the larger cities of northwest Germany, even as far as Wiesbaden, Frankfort, and Nurnberg.

Everywhere large and small groups of sailors appeared and founded soldiers' councils.

The consequences of this disintegration were destructive from every viewpoint.

No one who has devoted his life to our navy and her work and who with a breaking heart has been an eyewitness of her downfall will ever forget the feeling of utter hopelessness experienced at that time.

In connection with the above an account by the same author, in which he treats especially of the responsibility of the U. S. P. D. in the collapse of the navy, is to be found in No. 29 of the "Politischen und Militarischen Zeitfragen," published by Georg Bath, Berlin, SW. 11.

GOLD EXPORTS.

25 May, 1921.

The large quantities of gold being exported from France have caused considerable comment. Between 1 January and 1 May the exports of gold from France to the United States have reached 140,000,000 rubles gold. Fifty million of this went in April. The normal export of gold in that period was probably not over 50,000,000. The bulk of the balance has come from Stockholm in the form of strips and ingots, evidently having been remelted there so as to destroy any identification marks. It has been understood in Paris that this gold came originally from Moscow and was formerly owned by the soviet government. Various stories have been in circulation concerning the use to which this gold was being put;

one was that it was for propaganda and revolutionary work in foreign countries, the other that it was money being sent by Lenin and Trotsky to provide a fund in case they were compelled to leave Russia. It is possible that some of the gold is money for propaganda, but the bulk of it probably goes through the Stockholm banks in the ordinary and legitimate course of business. It is understood that the Moscow Government has sent this gold to the Stockholm banks and drawn against it and that the Stockholm banks are realizing on their security and sell this gold to bullion brokers in Paris, or ship it through commission brokers in Paris to the best market for gold, which is the United States. Fifteen million francs of this gold has gone to the Argentine recently. All of the firms who are handling this gold have been investigated in Paris, and, with one possible exception, they seem to be commercial institutions above question. The exception to this is the Société France Baltic, represented by Gaudot de Mauroy, this firm being a branch of Optorg (Ltd.), No. 63 Champs Elysees. The British authorities profess to be very suspicious of this firm in connection with Bolshevik gold, and apparently if there is any way in which this gold is being used for questionable purposes in foreign countries it might be through this agency as described.

JAPANESE ANTI-AMERICAN PROPAGANDA IN CHINA.

Source: Reliable.

(12225–C.)

16 April, 1921.

The two attached copies of articles appearing in the Japanese Advertiser of 7 April, 1921, give some idea of the trend of Japanese thought and of propaganda with regard to the United States and China. They should assist to a certain extent in anticipating Japan's future moves.

The extent of anti-American propaganda being carried on through the Japanese-controlled press in China is not known, but it is safe to assume that desperate efforts will be made to dislodge the United States from the present favorable position she holds with the majority of the Chinese people.

At the same time Japan, having made a rather complete failure of carrying the "twenty-one demands" to a successful conclusion, in addition to arousing bitter animosity among the Chinese thereby, will now probably endeavor by soft words, protestations of brotherly love, promises of "friendly cooperation," etc., to dispel this animosity and gain a foothold in China by less dictatorial and more subtle means.

Several of the methods used by the Japanese for some years past toward gaining influence in China are of interest. They were disclosed by an absolutely reliable and well-informed Chinese. He

stated that nearly all the Chinese students educated in Japan hated the Japanese, but that the Japanese, through certain influences, place selected ones from among the students in responsible positions. Afterwards students so placed nearly always become friendly disposed toward Japan. Their careers are closely followed by the Japanese, and when they attain to positions of influence or prominence they are approached by Japanese with bribes, promises, etc., and nearly always become slaves and tools of Japan. He cited "Little Hsu" as one of the most horrible examples of the above practice and said that whenever a student became friendly disposed toward Japan the other students called him a "Little Hsu."

Some years ago China agreed to send a certain number of naval academy graduates to study in the Japanese Navy. Their course was to have been three years. Seventy-two officers were sent in the first lot. At the end of the first year 70 of these officers returned to China and in a body appealed to the minister of the navy not to be again sent back to Japan. A call was issued for volunteers to take their places, but only one volunteered. New assignments were not made until the Japanese Government complained that China was failing to fulfill her agreement. Thereupon the Chinese minister of marine again endeavored to get volunteers for this post. Not one volunteer was obtained. The situation was becoming embarrassing, and finally the Chinese minister at Tokyo was instructed to fill these posts with as many Chinese students who were at that time studying in Tokyo as he could obtain. About nine such students were obtained. They had had up to that time no connection with the Chinese Navy, but after completing the course of instruction in the Japanese Navy they were commissioned regular officers in the Chinese Navy. However, these officers were never given good assignments or placed in responsible positions until about 1915 or 1916, when the Japanese Government asked China to explain why such officers had been discriminated against, and later, through pressure of some sort, they were given commands or other responsible assignments, i. e., all officers who had studied in Japan.

As a result of Japan's attitude of protection toward officers who have studied in Japan, when volunteers were asked for last year eight responded.

If the above practice is allowed to continue it is not difficult to see where the control of the Chinese Navy will eventually lie.

The informant also stated that there was absolutely no question about Japan's efforts being exerted to the uttermost to prevent the unification of north and south China, and that there is every reason to believe that Semionov's activities at Urga are being backed by the Japanese Government.

The following article is taken from the Japan Advertiser of 7 April, 1921:

PEKING, *March 29* (by mail).

A further example of the anti-American propaganda being issued by Japan is evinced by the following article appearing in a recent issue of the Tsinan Jih Pao, a powerful Japanese organ printed in the Chinese vernacular at Tsinanfu, the capital of Shantung. Referring to a previous article under the caption of "Is the American Army Worth Our Fear?" the writer expresses his satisfaction that Bernhardi, in discussing the possibilities of a war between America and Japan, agrees so fully with his own conclusions to the effect that such a war would end in drawn results, except that the "Philippine Islands and other American possessions in the Pacific would be occupied by the Japanese Army. While it would be difficult for us to occupy American territory, it would be equally difficult for the American Army to set foot on our land, and though it would not be impossible for us to take the Philippine Islands and other American possessions in the Pacific, as Mr. Bernhardi has said, it would be contrary to our plans to make costly sacrifices to effect their capture."

Continuing, the writer says: "In a war which we expect to last 10 years, economy is a matter of supreme importance. Expenditure for such war necessities as fuel, arms, and ammunition should not be made unless strictly necessary for bringing the war to a successful conclusion. On the other hand, we should do our utmost to preserve peace in China and in Siberia, so that we can fulfill our mission in this world and establish the foundations of an everlasting empire, and the whole people should be united for the development of war industries and daily necessities, so that in case of emergency there would be no shortage. Should these conditions be fulfilled we would have nothing to fear from a war with America, which must be limited to the waters of the Pacific.

"In preparing ourselves for the coming struggle, we must first construct battleships of the newest type, which is rather difficult, if not impossible, in view of the lack of technical ability and requisite material, a difficulty that at first appears unsurmountable, but can be easily overcome when the fact of China's and Siberia's natural resources are taken into consideration, resources that offer unlimited opportunity to the developer. It is to China and Siberia that we must look for raw material.

"In order to improve technical skill, laws must be enacted for the promotion of technical education, while technical experts from England, France, and Australia can be engaged to assist us in shipbuilding."

Likening Japan to a tree, which depends upon its roots and soil for existence, the writer cites the strength of England, owing to her deep roots in Canada, Australia, India, and South Africa, and goes on to say that "Any attempt to check our expansion in China or Siberia can not be viewed as a threat to our national safety and existence. That economic expansion knows no territorial limit has been time and again maintained and advanced by the American people. It is our duty, as well as our mission, to preserve peace in the Far East and to see that the various peoples living there enjoy their respective rights; are protected as to life and property; and, what is more, enabled to satisfy their desire for economic development. America, instead of assisting us in our humanitarian task, is placing every obstacle in our way, thereby checking not only our natural economic expansion but menacing the very existence of our Empire. While the damaging statements concerning our national character, made in connection with the emigration, can not be accepted without protest, the restriction or total exclusion of Japanese from

America would not affect the future of our country, but when our Chinese and Russian policy is interfered with, a blow is struck at the very life of our Nippon.

The following is a translation from the "Kokumin" of 6 April, 1921:

America regards China as her only market in the future. Since the Republican administration took office, the policy of the American Government has become clearer, and it is easy to perceive the America is positively taking the offensive.

For this purpose, America will probably take the lead in connection with the question of the reconciliation of the south and the north in China. She will also forestall other countries in abolishing extra territoriality in China. That America will support China in regard to the Shantung question and the Sino-Japanese agreements goes without saying. If the Republicans could move the League of Nations, America would be in a position to control it, as has been desired by Mr. Wilson, and she would be able to assist China as she pleased.

China has perceived this state of affairs, or rather such persons as the American minister have told China the change in American policy toward China and induced the latter to wait for a favorable opportunity. While Chinese sentiments toward America are becoming as favorable as some time ago, Chinese sentiment toward Japan is noticeably becoming worse. This is because of the fact that America has now decided upon her policy toward China.

Japan says that she is in a position to lead China, but she does not indicate her policy until she has made herself sure of China's intentions. This attitude is by no means befitting to a leader, and is one of the reasons for the alienation of China from Japan.

Japan must make her Chinese policy take a new turn by returning Shantung to China. From the outset Japan has not intended to retain the Province.

JAPANESE SECURING MINERAL RESOURCES IN FANGTSE.

Source: Reliable.

(12323–C.)

25 March, 1921.

The following is a dispatch relating to the case of the forcible occupation of the people's lands at Fangtse by Japanese business men in violation of the treaty and the opening of mines:

YOUR EXCELLENCY: I beg permission to remind Your Excellency that the case of Chung Shan Ling Mu and other Japanese business men relating to the opening of mines, building of a light railway, and the occupation of the lands of Chinese citizens has repeatedly been a subject of negotiation. Whole volumes of correspondence relating to the case are on file, but all in vain. Directions from your office require us to wait until the Central Government shall have settled the case.

Although at the outbreak of the war between Germany and the Allies, Japan acted ostensibly as an ally, her capture of Tsingtao proved that she harbored wild ambitions. Neglecting her duty towards the Allies of whom China was one, she refused to return Tsingtao to China, with the result that the Shantung question has been "hanging fire" for several years.

Now she (Japan) is treacherously trying to succeed to Germany's rights in Shantung, conveyed by the Kiaochow convention. Her subjects are secretly opening mines, building light railways, and taking the land of our citizens by force. A series of intrigues of this sort are being carried on fearlessly.

In spite of my protests they are stubbornly carrying on their business regardless of our prohibitions and our laws. Although all the difficulties of the negotiations are on file, and although I shall await the decision of the Central Government without bothering you, there are some difficult points which I beg leave to refer to Your Excellency's careful consideration.

My investigations show that these Japanese business men have occupied more than 60 large "mou" (a large "mou" equals 3 small "mou") of land. They have secured these pieces of land gradually and bit by bit; the largest pieces cover 2 or 3 "mou" and the smallest ones are less than one-tenth of a "mou." Since the landowners differ in weath, some of them have been coming to this office for several years to have this matter settled. Every time I told them frankly the real state of things and the reasons for the delay. Fortunately, they have waited peacefully. The well-to-do can wait, but the most of these landowners are very poor with many persons dependent upon them, so that they can not afford to have their land occupied and to see their families starving. Since we can not allow them to receive any rent from the Japanese, as that would be giving our tacit approval, these people have no means of securing a livelihood.

With the winter approaching and with no settlement in sight, the said landowner, driven by hunger and cold, came again to my office complaining of their condition. I, the commissioner, am touched by their pitiful plight and I am asking you for instructions as to what shall be done and as to whether we shall give them any relief. Besides sending a copy of this dispatch to the bureau of industries, I humbly refer this question of the public welfare to Your Excellency's Military Government and Acting Civil Governor Tien.

NOVEMBER 23, 1920.

JAPANESE ACTIVITIES IN ENGLAND.

Source: Reliable.

(14396–A.)

6 May, 1921.

The Japanese navy department has placed an order with either John Brown or Thomas Firth for complete armor for one battle cruiser and for some armor-piercing shells.

The British Admiralty has to date refused to permit this order to be filled. However, the British Admiralty has raised no objection to Vickers filling similar orders received at about the same time and referred to in my report W–148 of 18 February, 1921. The reason for this action of the Admiralty is stated to be because the Vickers armor and shells being made for Japan are not of good enough quality to meet present British specifications and requirements.

The Admiralty has also refused to allow any Japanese officers to be stationed at the Firth works, whereas 18 Japanese naval officers are stationed at the Vickers works.

Even though this Firth order has been held up by the Admiralty, tests are being conducted by the company on the armor and shells

at the British Admiralty proving grounds. The Japanese navy department wants all results of these tests. The Firth Co. is willing to submit these results only on condition that the Japanese navy department pays 40,000 pounds sterling toward conducting the tests, and in case the Admiralty eventually permits delivery of this order, the Firth Co. will assume all proving expenses and deduct the 40,000 pounds from the total cost of the order. The Japanese navy department has so far refused to agree to these conditions, insisting that the results of tests should be submitted to it whether or not the order is executed.

The Firth Co. believes that the navy department's real object in wanting the results of tests is to obtain certain data and to station officers at the proving grounds.

The informant stated that a good piece of armor plate or good shells had never been sold to Japan.

JAPANESE IMPORTATIONS FROM GERMANY.

Source: Reliable.

(7510–B.)

6 May, 1921.

The German steamer *Normania* arrived in Nagasaki on April 10, a portion of the cargo being 1,400 tons of German barbed wire. The same ship brought a quantity (unknown) of German explosives, which were sent to the naval arsenal at Sasebo.

A German named Walter Schere, representing Hugo Stinnes (the German industrial king), has just arrived in Japan for the purpose of attending to the importation of German aluminum for the electrical apparatus of the new naval program.

The Dutch steamer *Alderamin* has just brought from Germany (April) 800 tons of steel for armor plate.

From April 1 to April 10 800 tons of chemical products were imported from Germany.

JAPAN—INDUSTRIES.

Source: Reliable.

(11345–P.)

16 April, 1921.

Japan must buy abroad her machinery requirements for manufacturing and for her industrial development. Her great manufacturing industry is cotton yarns and fabrics.

The cotton yarn used to go in great quantities to China, but that trade has fallen off enormously. First, the high price of cotton made producing cost prohibitively high. This high price is combined with the low purchasing power of Chinese money, due to fall in price of silver. There have been numerous cotton mills established in China

using much cheaper labor. Therefore the export market of these goods from Japan will be permanently out a great deal. The Chinese boycott is another factor, quite indefinite.

Japan raises no cotton; Korea a negligible amount. One company only uses a small amount of Egyptian cotton. The cotton comes from India, China, and America. The Indian and Chinese cotton is harsh and short stapled. The American is long stapled, but of a much higher price. But in a competition for markets, the question as to whether Japanese cotton goods and yarns can hold their own in competition with British and American fabrics is depending entirely upon the quality of the fabrics and yarn, which depends upon the amount of United States cotton used. Therefore Japan becomes increasingly dependent upon America for raw materials as she increases her markets. Japan is, therefore, absolutely dependent upon foreign sources for raw cotton and machinery, and absolutely dependent upon America for raw cotton. Her raw silk is her only means of paying for this raw cotton, and America is her only market for it.

The balance of trade between Japan and Europe is always against Japan.

In the past she has made up that balance by trade with America.

No European power would finance Japan in a war with America unless on the belief that Japan would prove victorious.

It is significant that the silk market is so vital that the first breath of disturbance there was the factor that brought about the complete smash in March, 1920.

While the common belief, as a result of the European war, that a nation self-contained to the extent of which Germany and Japan are could be independent financially in war time, and that the determining factor as to the European War was that of man power, this would not hold in the case of a Japanese-American war, which would be a naval struggle. Material would be the vital factor.

Japan can certainly feed her entire population from her own soil, and can do without the modern industrial development, but this would mean the negation of everything she has been striving for during several decades and her slipping back into the status of a third or fourth rate power.

JAPAN—FINANCIAL NOTES.

Source: Reliable.

(10213–G.)

18 April, 1921.

In addition to and not included in the War Department budget for fiscal year 1921–22 is a sum of approximately ¥75,000,000 for

"temporary military expenditures." This amount is to be spent on the Siberian and north Sakhalin expeditionary forces, the latter getting about ¥17,150,000. For the preceding fiscal year the amount under this heading was approximately ¥150,000,000.

The north Sakhalin expeditionary force will send out in May, 1921, the following detachments: To Nikolaievsk approximately one regiment of infantry with detachments of cavalry, artillery, and engineers under command of Maj. Gen. Tsuno; this force will send a detachment to Mago. To Dekastri: One battalion of infantry, from which a detachment will be sent to Sofiisk. A military road has already been built from Toychara (south Sakhalin) to Alexandrovsk, and various barracks have been constructed in the vicinity of the latter place. During the present year permanent barracks will be constructed at Nikolaievsk, Dekastri, Mago, and Sofiisk. A military road will be constructed from Alexandrovsk north along the coast to a point opposite Nikolaievsk. The strait will be crossed in summer by a ferry and in winter by a road, and from the opposite bank the road will be continued to Nikolaievsk. A telegraph line will follow the same road. A cable will be laid from Alexandrovsk to Nikolaievsk and Dekastri and a wireless station erected at Dekastri. A coal-supply depot for the navy will be established on an island in Gulf of Tartary.

It is reported that the extraordinary war estimates, amounting to ¥100,000,000, passed by the diet, include the expenditure on account of the Japanese troops stationed near Alexandrosky, consisting of a mixed brigade. Simultaneously with the inauguration of civil administration in that Province, says the report, the Government proposes to build barracks of solid structure at Nikolaesk, Decastri, and Alexandrovski from the present fiscal year, so that the troops may be stationed in these places even in the winter season. Besides the construction of these barracks, a submarine cable will be laid between Nikolaevsk and Alexandrobski, roads connecting important local places will be put in good repair, and telegraph wires will be installed where necessary, so as to perfect the communications facilities. Military sleds will be employed to Nikolaevsk, Decastri, and Alexandrovski in communication in the winter season. The regiment of troops now stationed at Alexandrocski will be detailed to Nikolaevsk and a battalion to Decastri and district around.

Recent information has been received from a reliable American that the Japanese Government has assembled about 2,000 coolies, who are to be employed in the construction of these barracks.

This looks like permanent occupation.

JAPANESE PURCHASES IN ENGLAND.

Source: Reliable.

(14396.)

May 13, 1921.

The Japanese are now buying most of their supplies for their navy in England and are buying for their army in France. The purchase of chemicals has been transferred from England to Holland and Germany, as the German chemical industry has regained its feet and most of the chemical plants in England are idle. There is no longer any import of chemicals from Canada or from the United States into England, as these countries have been unable to compete with the prices made by Germany either direct or through Dutch agents. There is also a belief, to be verified later, to the effect that the Japanese have bought and are buying all armament from Germany.

The Japanese have bought considerable from the English disposals board, one item being 30 "F" flying boats with Rolls-Royce engines.

The Avro contract referred to in a previous memorandum is probably for 50 machines, type 504 "K." These are training planes with dual control, said to be the best in the world for training pilots. They can be used on land or sea, and cost about £1,250 each, ready to fly. They are fitted with 100-horsepower Gnome Mono-Soupape engines.

The 30 Japanese at Bursledon referred to in a previous memorandum are being taught to fly these machines.

The principle on which the Japanese work is to order a small number of machines, learn how to fly them, take them to Japan, and there reproduce them on a larger scale.

The Bristol Aeroplane Co. is now building 12 Panther ship seaplanes for use on aircraft carriers.

Short Bros. are building 30 seaplanes for Japan in England, but a large part of the staff of this firm has gone to Japan to teach the Japanese how to build them in their own country.

An estimate has been promised as to the total amount purchased by Japan from the English disposals board since the armistice. This may or may not be forthcoming, but it is probable that some approximate idea may be gained later.

JAPAN—PROPAGANDA.

Source: Reliable.

(11345–P.)

16 April, 1921.

Mr. Nomura Haroku, Kenseikai member of the House of Representatives of Japanese Imperial Diet, in a statement before the house on March 23, 1921, said that according to the latest news from

abroad an agreement had been arrived at between Britain and America regarding naval matters. In consequence of this agreement, it was reported, America would concentrate the main strength of her Navy in the Pacific in the future. It was scarcely necessary to point out that such a move on the part of America would have a far-reaching effect on Japan's interests. This agreement might have the effect of enabling Britain to reduce her naval estimates, but it would increase the menace to Japan. It was noticeable that this rumor was being emphatically denied by the British authorities, but the interpolator wished to have the assurance of the Japanese authorities whether this report was well founded or not. It was fully anticipated in many quarters that the assumption of the presidency by Mr. Harding would bring about a change in the diplomatic policy of the Washington Government, and, in view of this fact, Mr. Nomura thought that the rumor already mentioned could not be so easily dismissed.

Admiral Kato, minister of the navy, replied that the Government was not in receipt of any official report confirming the rumor. In the minister's opinion it was untrue, as such an agreement was impossible from a technical point of view. He was rather inclined to the belief that the report was a canard set afloat by some interested party.

JAPAN—POLICY.

Source: Reliable (Japanese Press).

(11345–P.)

16 April, 1921.

It is the policy of President Harding to move the fleet to the Pacific coast, and this is worth paying attention to; and, more especially, Gen. Wood will shortly come to inspect the Philippine Islands. The ostensible reason for his visit is the inspection of the Philippines, but in reality he is making this trip to inspect the defenses of the Pacific. Secretary Daniels always said that a fleet should be maintained on both coasts of the United States, but this is unnecessary and too expensive because America will never fight with Great Britain—that would be like a fight between brothers—and it is quite impossible for brothers to fight.

For instance, some day America will fight with Japan, but England will never come forward to help Japan. Harding's policy is that all countries reduce armaments; that is why England, too, wishes to reduce her armament. America spent a great deal of money to build the Panama Canal and overcome the division of her fleet. The policy of a divided fleet is a very dangerous one. The assembling of the American fleet on the Pacific affects Japan directly and no other country, and Japan must think about it in this way,

because there are so many questions—for example, the question of Yap, the anti-Japanese question in California, Sakhalin. So Japan can not think otherwise. We must pay attention to the power of the American Navy.

After the inspection by Gen. Wood America will surely take notice of Java, and especially Pearl Harbor and Canacao Bay, and coal storage will be made on Oahu, and then some action will be started.

At present how can we agree to naval moderation? At any rate we must try not to suspect America, but as Japanese we must think about this matter very carefully.

JAPAN—ANNUAL REPORT OF THE NAVY DEPARTMENT, 1918–19.

Source: Reliable.

(13641.)

6 May, 1921.

General Condition of the Navy.

The ships launched in the fiscal year 1918–19 are the man-of-war *Tatsuta* and destroyers *Tanikaze*, *Minekaze*, and *Sawakaze*, and the only ship struck off the list is the *Kawachi*. After adding the vessels launched and deducting the one struck off the list the numbers of naval vessels existing on 31 March, 1919, are men-of-war 64, with a total displacement of 652,238 tons and I. D. H. 1,114,136; destroyers 77, with a total displacement of 46,064 tons and I. H. P. 785,375; and torpedo boats 24, with a total displacement of 3,119 tons and I. H. P. 66.200. Comparing these figures with those of the preceding year, there are increases of three in number and 181,500 in I. H. P., but a decrease of 13,310 in displacement. (I. H. P. of one man-of-war and two destroyers, not completed yet, are not included in the above figure.)

The total number of personnel existing on 31 December, 1918, is 68,856, of which 67,621 are officers and enlisted men, while the remaining 1,235 are civilians. Comparing these figures with those of the preceding year, there are increases of 3,499 in officers and enlisted men and 80 in civilians. The total number of employees and hired men is 4,472, which is an increase of 321 over the similar number of the preceding year.

The settled accounts of the fiscal year 1918–19 are ordinary expenditures 54,602,461 and extraordinary expenditures 161,300-928,297; total, ¥215,903,389,793. Comparing these figures with those of the preceding year, there are increases of ¥6,073,479,264 in ordinary expenditures and ¥47,394,826,215; total, ¥53,468,305,479.

Other items are given under their proper headings.

JAPANESE OPINION RELATIVE TO PHILIPPINES.

Source: Reliable.

(12062–B.)

6 May, 1921.

Although it is realized that these interviews were prearranged and premeditated and that many of them are similar, yet it is considered more lucid to forward them complete rather than attempt to give just the salient points. The general trend of the interviews is: "Do what you please with the Philippines, but let us do what we want in Korea and Siberia."

[Viscount Kato, formerly ambassador to England, one of framers of Anglo-Japanese Alliance (Apr. 16).]

Japan has no Philippine ambitions. If she had she could have realized them long before the United States went there. Aguinaldo had some idea of getting Japan interested, but we gave him no encouragement whatever. What we want is an orderly and peaceful Philippines; whether the people get independence or not is no concern of ours. On the whole, if they are not quite ready they should remain under United States sovereignty.

At the same time we do not want the islands strongly fortified and a menace to the peace in this part of the world. In fact, we do not want naval rivalry. We are very much concerned about the concentration of naval power in the Pacific. We have problems enough nearer home than the Philippines. We do not wish to *expand* in *new directions*, but at the same time we would like to have freer scope for engaging in peaceful vocations in the Philippines. However, I am afraid we have not much chance against Chinese competition, which is very strong there.

In this state of world unrest Japan's problem is not one of expansion but of concentration and of bringing into harmony the things we have already done. Until a few years ago we had made progress in coming to American and European standards. As a result of the World War Japan must change her position to conform to the new circumstances.

Independence or otherwise, all Japan wants is peaceful development in the Philippines. As to ownership it is no concern of ours. In the matter of disarmament we are much concerned. It means a heavy burden upon us. At the time the 8–8 program was announced the 25,000-ton ship and the 12-inch gun was the limit. Now it is the 40,000-ton ship and the 16-inch gun. This makes a tremendous difference in the cost and adds enormously to our burdens. Premier Hughes, of Australia, was talking the other day of the fear of Japanese cheap labor. Why, do you know that the cost of labor has risen so in Japan that the coolie who carries sacks of flour from the wharf to the warehouse receives ¥5 a day? That was the top price. I believe it is getting a little lower now; that is ¥30 or 60 shillings a week for unskilled labor. I read in the morning paper in reference to the miner's strike in Britain that the miners wage scale is 64 shillings a week. And yet Mr. Hughes talks of Japanese cheap labor.

So our burden is very much felt. It would be a very good thing for the great powers of the world if there was some sort of international agreement by which this enormous expense for armament and its consequent rise in taxes and wages could be cut down.

There is no reason why the Anglo-Japanese alliance should be renewed. This may sound strange coming from a man who had an important part in the drafting of that alliance. But I will say this: If Britain intends to im-

pose heavy conditions upon Japan, as is reported she purposes doing, this makes the matter of a new treaty one of great caution. If Great Britain or Australia think that Japan is eager to get an alliance under any conditions that may be imposed, they are very much mistaken. The British have been masters in the Orient so long that they look upon the Japanese as intruders and newcomers. They must change that view.

(Baron Sakatani, formerly minister of finance, and leader of barons in the House of Peers (Apr. 15).]

I know very little of the Philippines and know very few Filipinos, although I was called upon recently by the speaker of the house, Osmena. I do not wish to pass judgment on the Filipino, because I do not know his ability for self-government, but the main question is, If the United States should withdraw, will the Filipinos be able to get along without financial assistance and without intellectual assistance? These are the important questions involved and possess an international interest.

I hear that the Filipino has developed very much under the American tutelage, and judging from my personal interview with Osmena, if such men are many in the Archipelago, then Philippine independence can be accomplished. But financial ability is the chief requisite of independence in any country. On this point will depend greatly the question of independence. My view is, of course, an international one. I am a strong believer in the League of Nations or an association of nations, and my views are based on the general peace of the world. Therefore, as to the Philippines, it must first be known whether or not independence will bring the best results. We must know if the Filipinos have the money for the responsibilities of independence and the men capable of leadership. If so, it is best for the United States to withdraw. But if otherwise, then the United States should continue in control for another 10 or 20 years. Of course, in this eventuality the United States will be much misunderstood, and it must be made clear to the Filipinos that the United States is not changing its word as to ultimate independence when the people are ready for it.

If independence is granted and trouble arises, internally or otherwise, America should first be appealed to, but it should consult with Britain, Japan, and Australia before taking any action. But in any and every phase of the dispute America should assume the leadership.

Should the United States refuse independence and fortify the islands, this would be a foolish policy. I would suggest to Gen. Wood that the best defense of the Philippines is disarmament. Japan is fortifying islands lying between Hawaii and the Philippines (probably Carolines) and other islands between Japan and Formosa (probably Loo-choos) as well as a third strategic point affecting the Philippines (probably the Bonins). These fortifications are not making for the peace of the Orient.

America, Britain, and Japan are so friendly that if the statesmen of each country could get together around a common table these complications could be averted. As the League of Nations is not to be trusted with America out of it, the peace of the world would best be assured by an understanding among these three powers, and now, when the Anglo-Japanese alliance is about to be renewed or revived, is an opportune time for this conference. If the alliance is renewed, America should be consulted, and this would make for a clearer and definite understanding. The reasons for the original alliance, which were the menaces from Russia and Germany, have been disposed of by the World War and the collapse and impotence of these two countries, and so the necessity for a continuance of the alliance no longer exists. But if the alliance should be

renewed America should first be consulted as to the best safeguard to world peace. Friendly cooperation of the three countries must be brought about; now with the alliance pending and the Philippine issue opened the time is ripe.

[Viscount Kentaro Kaneko, privy councilor; was special ambassador to the United States for negotiation of Portsmouth treaty; friend of Theodore Roosevelt; floated the Morgan loan in Russo-Japanese War; president of American-Japan Society.]

The largest picture in the room was one of Theodore Roosevelt, autographed "To Baron Kentura Kaneko, with the regards of his friend, Theodore Roosevelt, March 20, 1905." There is also a smaller family Roosevelt group over the fireplace. Kaneko has been often in America, notably in 1900 and also in 1904–5, during the time of the Russo-Japanese War. He enjoys probably as wide an acquaintance with Americans as any other leading Japanese.

I hope the United States will remain in the Philippines, in order that it may be near to China, for China is certain to be a hotbed of international trouble for many years to come. Japan and the United States, as neighbors and as bordering on the Pacific, have a great deal to do with Chinese affairs and to strengthen and keep the peace of the Orient. I have held this view for 20 years. The United States should remain close to China. Hawaii is too far away. With the Philippines as a rendezvous of various races it is a test of the experiment of mixing the races. Spain was a decadent nation and did not succeed, but America has demonstrated her melting-pot qualities.

I would like to have a new Americanism in the Philippines which can be transferred to China. If that Americanism has convinced and harmonized the mixed population of the Philippines it will also serve to harmonize Formosa and China. By coming into contact with Americans, the Malays and Asiatics will better understand the Americanism and this understanding makes for the peace of the Orient. If the United States can show a good example of mixing the three races, you Americans will have solved a vexing problem.

I would like to see the United States hold the Philippines until that era when the two types of races are harmonized, and then the world question will be solved. Suppose you give independence to the Filipinos within 5 or 10 years. I can say that the Filipinos will make a mess of it. History has not shown them capable of self-government. The moment the American weight is taken away, the Filipinos will begin to quarrel among themselves. Who would pacify them? Certainly China can not; it has too much trouble of its own. Japan certainly can not, for we have barely kept Formosa under own rule. Then there are Korea and Saghalien. Japan has too many irons in the fire. Our limited resources preclude our helping the Filipinos. Therefore, the United States is the one nation that can do so. I go further, and say that it is the duty of the United States to do so.

The situation is very different from that of Cuba. It was easy to withdraw from there, for Cuba is at the very door of America. But the Philippines are 20 days or more away. There is much fiery Spanish blood among the Filipinos. If America withdraws, that blood will begin to boil. If Japan should step in, her motives will be suspected. We Japanese believe that the Filipinos are best left in the hands of America. We know that America covets no more territory and has no ulterior designs. The Philippines are to-day the only place where the Caucasian and Mongolian civilization comes into contact, and also the Malayian. It is a great experiment in the welding of the races so that they may live and work side by side. We Japanese hope that America will be permitted to continue the work, so well begun, and will succeed.

If the United States should keep the Philippines her motives will not be misconstrued in Japan, even if she announces her purpose to remain permanently.

But if the United States should withdraw, Japan would be sorry, for it would add another to our troublesome neighbors. We have trouble enough in Formosa, Korea, and Siberia. Therefore we would prefer that the United States should not leave the Philippines. We can handle the situation where Mongol blood is concerned, but where Spanish and other mixtures exist, as in the Philippines, the problem is best handled by the Americans. So long as America remains in the Philippines we feel perfectly safe in sending our commerce to the Philippines, and commerce is the life of Japan. We should be genuinely sorry if the United States left. We will not misjudge her motives if she remains, but will welcome it.

[Mr. Hanihara, vice minister for foreign affairs (Apr. 15).]

Like my chief, Count Uchida, I hesitate to express a personal opinion on the Philippine question at this time for fear that it will be construed as the policy or view of the Government of Japan. Therefore you will understand that this is but a personal opinion. The Japanese people, and particularly the intelligent portion of the population, never have felt the presence of the United States in the Philippines as a menace; but, on the other hand, we welcome the United States as neighbors. Our sole desire is to promote commercial interests and friendly relations. What the United States may or may not do with reference to the Philippine independence is not a matter for the Japanese to express an opinion upon. All that Japan wants is the preservation of peace in the islands, and it has absolutely no designs upon the islands whatsoever. It is the hope of the Japanese that the islands will continue to be governed in the future as peacefully as in the last 15 or 20 years.

The majority of the thinking Japanese prefer that the United States should remain in the Philippines because Japan can not prosper without good neighbors. We do not want to be surrounded by people who can not govern themselves. We hope that even if the United States should give up its political power in the Philippines it will remain there commercially, and thus lead the people of the Archipelago by the presence of her merchants, bankers, and her industrial developers. But if the United States should see fit to grant immediate independence and withdraw entirely from the islands, the United States should be first to step in should trouble arise in the Philippines. Japan has no desire to assume such a responsibility. Her motives not only would be misconstrued but would be resented.

VISIT OF JAPANESE CROWN PRINCE TO ENGLAND.

Source: Reliable.

(14515.)

May 13, 1921.

If the British Government had had its way, the visit of the Japanese Crown Prince would have been canceled, or at least have been postponed until the situation in the United Kingdom made things easier for the authorities. Every effort has been made, however, to make his visit an official success, and the Crown Prince will undoubtedly fail to note the restricted railway facilities and other things which are causing great annoyance and loss to the British people themselves. He will be carried about in special trains and in quick time and, unless the situation gets very much worse than it is now, probably nothing will be allowed to interfere with the carrying out of his program, which involves considerable traveling throughout the

United Kingdom and a stay in the country of over three weeks, that is to say, from May 8, when he landed in England, until June 1, when he goes to France.

The usual crowds have gathered to see the Japanese Crown Prince wherever he has been on exhibition, but these crowds do not mean anything more than general curiosity to inspect the visitors and to witness the show which the British Government provides on all such state occasions.

The whole visit is on a strictly official basis and the British Government is handling the thing from beginning to end, and the officials in charge of the ceremonies will be relieved beyond measure when His Imperial Highness crosses the channel to France, for then their responsibility ends, and under present conditions in England this responsibility is a serious burden.

The arrival of the Japanese Crown Prince at Portsmouth attracted considerable public attention to the conditions prevailing at that great naval base. The Government yards there cover about 300 acres, and there are a large number of men at work doing nothing at present but repairs. There are facilities for building anything that may be wanted for the navy, but at present there is only a small oiler under construction, and a light cruiser which was begun during the war will shortly be launched. The people at Portsmouth are agitating strongly for one of the four new ships to be provided for in the naval estimate to be built in the Portsmouth yards, but they profess themselves to be very hopeless as to getting the work done there. It is believed this work will be done in the north of England.

There are rumors in Portsmouth that there are to be large discharges among the workers in the Government yards, and they are now working on short time, the week ending Friday noon. Those in authority profess to believe that it was a great mistake when these men were taken on not to have told them that they would lose their positions as soon as the war work was finished. They have now hung on so long that they think they are entitled to their positions and that the Government should provide them with work. Under the new armament estimates this will prove impossible as, as soon as the labor situation quiets down and other industries improve, it will be absolutely necessary for the Government to let a lot of men go from navy work.

JAPANESE VISITORS IN ENGLAND.

Source: Reliable.

(14396.)

May 4, 1921.

The British port authorities at Southampton have noticed quite recently the large increase in movement of Japanese to and from

England. They say that hardly a vessel comes from the United States or goes to the United States but what there are a large number of Japanese passengers. On the arrival of a vessel from the United States there are always a number of people on the docks waiting to receive friends and relations, and some of these visitors have permits to go on board the vessel before the passengers come off. As a rule there are several Japanese in this crowd, but whether they are merely there for social purposes or for other purposes, they have not caused any comment or aroused any interest on the part of the port authorities. Captain Patterson is the chief aliens officer at Southampton. He is now a civilian, but during the war was engaged with M. I.5, British war office, and was on port control. He is a very intelligent and obliging official and has the confidence of the British home office. It is through him that the home office and the British war office are made cognizant of any arrivals who it is considered desirable to take interest in when they land in England. He has been closely considering making separate reports upon Japanese arrivals, as he has been informed that his old department, M. I.5 of the British war office, is particularly interested in this type of traveler. It is understood that he is to inaugurate this scheme immediately, and in that way it will be possible, through established liaison with M. I.5 in London, to obtain more knowledge of movements through the port than has hitherto been possible. At present every foreigner entering England must have a British visé on his passport, so the British authorities are now receiving information from the British embassy in Washington and the British consul general in New York as to all Japanese who have applied for visé to enter England. Quite a number of cases have occurred recently, however, where men have arrived in England without visés and, if able to give a more or less satisfactory explanation, have been allowed to land, at least for a short stay. This whole question of British visé, it may be said, is causing considerable friction at the present moment, as a number of Americans have come to England without securing a British visé, and have been insolent to British port authorities when questioned as to its absence. The most notorious case of recent days has been that of Mr. Fels, who made himself very obnoxious to port authorities and dared them to enforce their requirement. The English Government has been very patient and obliging in these matters, however, and nearly everyone who has landed without a visé has been able to bluff his way through. It is known that the American State Department has recently been seriously concerned over the number of cases that have been reported to Washington from England of a like character.

JAPAN AND THE YAP QUESTION.

Source: Reliable.

(13147.)

6 May, 1921.

Japan's greatest dread is of being isolated. World-wide suspicion of her aggressive and militaristic spirit has already estranged other nations, and she dreads concerted action against her. She feels keenly the dislike and distrust of the world and suffers from wounded pride and a realization of racial and cultural inferiority.

If the United States were to recognize the Yap mandate, Japan would now probably be willing to come to some agreement about the cables that touch the island. But Japan would undoubtedly use such recognition as an admission that Shantung was a proper award and refuse to listen to America on that subject.

Japan is unwilling to give up mandate over Yap, being fearful lest such action on her part would be followed by America protesting the Shantung award, the occupation of northern Sakhalin, and the continued presence of large Japanese military forces in Siberia. It is this fear that makes Japan so tenacious of the Yap mandate. Japan is afraid that Great Britain and France will fail to support her claim for the Japanese mandate.

The question seems to have resolved itself into a diplomatic engagement with Yap as an advanced base. Japan will undoubtedly make a determined fight for Yap, employing all her traditional methods of evasion and delay to put off the taking up of the issues involved in Shantung, Sakhalin, and Siberia.

The following résumé and discussion of Japanese press comment on the Yap question by the embassy is informative:

On the whole the tone of the comments has been sober and restrained. So convinced have editors evidently been of the technical and moral soundness of Japan's stand that they have been disposed to rest their case upon an analytical presentation of the questions involved, without attempting, as they usually do, to cloud the issue by outbursts of feeling. On the other hand, alarmists have not neglected the opportunity to point out that the American claims were inspired by a desire to make the Yap question an opening wedge in the furthering of sinister designs for bringing about the eventual subjugation of Japan, and thus paving the way to absolute supremacy on the Pacific. Such views are not confined to mere sensation mongers, but are apparently held by men in high position, among whom may be mentioned Prof. Uesugi, who occupies the chair of constitutional law in the Imperial University and who is also a member of the examing board for the diplomatic service. In an article contributed to the Yamato he calls upon the nation to take a firm stand on the Yap question on the ground that

if Japan yields it will only tempt America to push Japan harder on other questions, until finally Japanese influence on the continent of Asia has been entirely swept away and even the independence of the nation placed in jeopardy. Although it seems inconceivable that a person of Prof. Uesugi's standing can seriously entertain such beliefs, it must be concluded that he would not be willing to risk his reputation and position by giving expression to such extreme views unless he were inspired by sincere conviction and a high sense of patriotism, or else that he feels assured that the favor of the chauvinistic elements among the governing classes, which he would win, is of more importance than incurring the disapprobation of the more enlightened elements. His article is therefore of peculiar significance whichever of these two suppositions is the correct one.

It is noted by several journals that America has enlarged her original claims regarding Yap, which at first were confined to the disposition of the cables, but had now come to the point of refusing to recognize Japan's title as mandatory for the island. This is generally interpreted as a strategic move to secure acceptance of the original demand. The press is unanimously agreed that the American contentions regarding the mandate are untenable from a legal point of view. Some journals point out that the question of reservations was not mentioned in the latest American note, because it was effectively disposed of by Japan's reply to the former note, which obliged the United States to shift her position and base her argument on the fact that she had not yet ratified the peace treaty, and therefore was not bound by its decisions.

It is argued by several journals that it is unreasonable for America to refuse to recognize the terms of the peace treaty simply on the ground of failure to ratify, in view of the fact that she took such a prominent part in drafting it and had at the conference every opportunity to exercise her rights to the full.

Notwithstanding that the press is so positive of the justice of Japan's position, considerable anxiety is expressed as to the outcome of the Yap controversy, as it is feared that Britain, France, and Italy, which were parties to the original decision, and which are more likely to be influenced by considerations of practical statesmanship than by abstract right, may be induced by America, on whose good will they are so dependent, to reverse the decision of the supreme council. Mention is also made of the growing firmness of the American attitude consequent upon a consciousness of power, which makes the vernacular press very pessimistic about a satisfactory solution.

The press is unanimously opposed to any concession by Japan on the question of the mandate, and therefore its only hope is in the possibility of bringing the negotiations back to the question of the

cables, on which the majority agree that there is room for compromise. The Yomiuri, a Liberal organ, points out that if the Japanese Government had displayed a more statesmanlike attitude at the time of the communications conference in regard to the American proposals relative to the internationalization of the cables a solution could have been reached without involving the question of the mandate. The Asahi believes that cordial consideration should be given to the American claims regarding the cables. The Jiji, a pro-Government organ, on the other hand, after praising the Japanese Government for the way in which it has handled the question, observes that if America from the outset had frankly expressed her desires to Japan and conducted the negotiations in a manner befitting the request a mutually satisfactory settlement would have long since been reached, for the question is so simple that it can be settled in a spirit of amity and friendship without seriously affecting the national prestige or interests of the two countries.

MEDITERRANEAN ACTIVITIES.

Source: Reliable.

(14199.)

1 April, 1921.

I have made arrangements for the airship *Roma* to be delivered on board a naval vessel at Naples for transportation to the United States. Maj. Thornell, of the Air Service, is making arrangements for the *Roma* and is keeping in touch with me through the naval attaché, Rome.

The Italians have commenced the evacuation of Dalmatia, which has been divided into three zones—the back country on Bosnia border, country about and west of Sebenico, and about Zara and all the islands. The evacuation of the first zone covers the first 10 days in April, the second zone the last 10 days in April, and the third zone the second 10 days in May.

On March 17, at 11 a. m., I was received in audience by the Bey of Tunis at his summer palace near Tunis. The French Government maintains a fiction of having a protector over Tunis with a resident general and a consul. Tunis is still in a state of siege on account of uprising of the population which occurred in 1911. This fiction is maintained in order to suspend certain political rights of the natives. The Bey of Tunis was particularly loyal to the French during the war and conscripted and sent to the front 200,000 troops to fight for the Allies.

I left Tunis at 8 a. m., March 18, and arrived at Bizerta at 11.30 a. m. the same day. Vice Admiral Varney, prefet maritime of Bizerta, very promptly sent his aid and a French Navy pilot on board

the *Childs* to accompany us on our cruise around Lake Bizerta, which lake is nearly round and of approximately 20 miles in circumference. The water is of a mean depth of about 24 feet, while a 33-foot channel runs from the entrance across the lake to the opposite side, where the French arsenal is located. There is a man-of-war anchorage on each side of the channel in the lake, and with a little more dredging this lake could be made a very formidable fleet base, as it is well protected from the sea by the entrance canal which is not over one-half mile in width. This entrance canal is further protected by a breakwater containing two entrances, although the north entrance is at present closed to navigation and has been closed since a severe storm, which occurred in 1915.

Two Russian men-of-war at anchor—a battleship and a cruiser—flying the old Russian national colors, were passed close aboard while cruising in this lake; these ships assisted in the evacuation of Wrangel's army and other Russian refugees from Russia and brought them to Bizerta. The battleship is the *Alexiev*, flagship of the Russian admiral. Two old French men-of-war—one battleship and one cruiser—were also anchored in the lake.

This lake possesses very great possibilities not only as a fleet base but also for a commercial port, as the banks of the lake have a gradual slope and will easily accommodate any amount of wharfage space and the accompanying facilities for loading and unloading vessels' cargoes.

There is also at present extensive berthing facilities for torpedo boats and other small craft, and it was noted that four Russian submarines were moored among the French torpedo boats and submarines.

The city of Bizerta is located on the north side of the entrance canal from the sea.

The Eupropean section of the city consists mainly of barracks, as Bizerta is the principal headquarters for the French colonial troops in Africa, and it is here that they train and prepare these troops for expenditionary work. Within the past month two regiments, consisting of about 2,000 Senegales troops, were sent from Bizerta into Germany to assist in the recent occupation around the Dusseldorf region.

The Arab section is not unlike similar sections in other cities along the north African coast.

There is a coal "briquette" factory in Bizerta, where Welsh coal is pressed into bricks for local consumption on the railroads and other steam plants around this section.

Our representative at Bizerta, Mr. Morton, is an Englishman and holds the position of American consular agent. He appears to be well known and equally as well liked by the local authorities at Bizerta.

There is a railway connection with Tunis and southern Tunisia and also with Constantine, Algiers, and other north African cities along the Mediterranean. The roads around Bizerta are of good quality and suitable for automobile driving.

Due to its very favorable location on the main commercial line through the Mediterranean and also due to the very advantageous location and characteristics which the lake and harbor possess, it is believed that Bizerta will some day become one of the most, if not, indeed, the most important commercial port along the north African coast. Surely everything points to the probability of its taking the major portion of the commercial trade from Tunis inasmuch as Tunis has the very serious disadvantage of poor harbor facilities and anchorages. The fresh-water supply in Bizerta is abundant and of good quality.

The Standard Oil Co. also evidently concurs in the belief of the future development of Bizerta inasmuch as they have recently installed a large fuel-oil storage plant where vessels may fuel while making passage through the Mediterranean. On the day of our visit to Bizerta an American steamship, the *Independent Bridge*, was taking on fuel oil from this plant.

The land around Bizerta is said to be rich in mineral deposits, and potash is produced and shipped in large quantities from this port. The soil is very fertile and is said to be especially favorable to the cultivation of wheat, and with modern agricultural practices could be made to produce from two to three crops per year. It should here be said, however, that the present methods of farming are very primitive, and there is a scarcity of modern farming implements. The average depth of plowing in general practice is about 1 foot. From the number of firms dealing in modern agricultural implements, seen in Tunis, and also from the fact that it was noted that a shipload of modern farming implements was unloaded at Algiers during our stay there, it is believed that there is now a tendency toward putting into practice modern agricultural methods and that within a few years the country around Bizerta will produce abundant crops, which will manifestly enhance the value of Bizerta as a commercial port. There are numerous olive groves around the surrounding country, and the trees are of large healthy height and are said to produce an abundant supply of olives for the olive-oil industry.

There are now encamped in and around Bizerta about 3,000 Russian refugees, including men, women, and children. Among these are many ex army and navy officers formerly in the service of the old Russian Government and who were forced to evacuate the Crimea when Gen. Wrangell's army was forced to leave by the bol-

shevists. Many of these refugees are of good family and appear to be very anxious to care for themselves as they are continually seeking employment in and around Bizerta, some of the women even seeking to obtain domestic employment. Some of the officers have also obtained positions as bricklayers. These refugees are at present in a pitiable state as they are entirely without funds and are subsisted on the regular French Army ration. The sailors from the Russian ships in port which were seen on the streets of Bizerta were clean and dressed in neat uniforms. Effort is now being made by the French to place as many of these refugees as possible on farms, and in time, no doubt, a large number of them will be absorbed by the country, where they will be engaged in agricultural pursuits. It is understood that Gen. Wrangell has returned to Constantinople, where he is now attending to form a new army to go into Russia to operate against the bolshevists.

OBREGON GOVERNMENT—MEXICO.

Source: Reliable.

(13595.)

7 May, 1921.

During a recent conversation with a wealthy Mexican ranch owner of Spanish birth, who requests that his name be withheld, but who is believed to be reliable, received the following information:

The Obregon government is very unpopular with the old régime in Mexico and is bound to fall shortly. Revolutions are being planned in Los Angeles, San Antonio, and several border cities, with the object of replacing the old Diaz régime in the presidency with Felix Diaz as president and ex-Governor Cantu as chief of staff. The educated and wealthy Mexicans feel that the only way that law and order may be restored is by the return to power of the old land-owning educated class. Obregon is a bolshevist and maintains agents in Russia to study bolshevism and also maintains agents in the United States for propaganda purposes. The wealthy Mexicans feel certain that the Obregon government will never be recognized by the United States and feel that unless the old class returns to power that American intervention is certain. This, while being distasteful to the educated Mexicans, would be welcomed as the lesser of two evils and the only method of returning to law and order. There was an outbreak at Tia Juana yesterday in favor of Cantu. The United States Department of Justice agents gave orders that Cantu was not to be molested this side of the line, and apparently the revolution is receiving the encouragement of this Government. No wealthy Mexican's life or property is safe, and in certain parts of Mexico the land is being taken away from the ranch owners and divided up among

the peons. Obregon has not fulfilled the promises he made before election as to revisions of the objectionable constitution adopted by the Carranza régime. Believes that Pancho Villa will join in any revolution in which there is a prospect for his personal gain.

PASSPORTS.

24 May, 1921.

The passport situation in western Europe is considerably confused, and it is doubtful whether the control of traffic is effective in any country.

At certain ports in Belgium no passports are even asked for.

If a passport is in order on its face, the French authorities do not go any further than to look at it.

The Dutch are somewhat stricter.

The most difficult country to get into is England, and it is doubtful whether the extreme discomfort of the passport examination will not react in time to the defeat of maintaining requirements as now desired by the British Government.

Another phase of the matter is the corruption of passport officials. Quite recently it was discovered that the British control officer at Antwerp, who had been two years in his position and who had been a major in the army, was giving visés for a monetary consideration to people desiring to visit England. This man's name was Clayton Barker, and he is now out of the service. It was also discovered by the American authorities that the American consulate at Rotterdam was giving visés to the United States under practically similar circumstances, and several changes have been made in the consular service by the State Department in consequence. Any expert criminal could probably find some way of getting in or out of any western European country in spite of all present regulations regarding passports and visés, and a very large number of people in important positions are reaching the conclusion that the loss, inconvenience, and expense undergone by the nine hundred and ninety-nine innocent travelers is not worth the steps taken to control the movements of the one undesirable. There is an insistent demand in the press for more freedom for travelers. One of the reasons why regulations are maintained is unquestionably the fact that a large staff of employees are required to carry it on, and these men do not want to lose their jobs. The result of this attitude is that their reports are all strongly in favor of keeping the restrictions in force, and this influence must be ignored in judging all official utterances on the subject.

The British Government will probably require a passport or some paper of identification indicating nationality from every person entering the United Kingdom for a long time to come. It is possible,

however, that in time the present cumbersome system of visés may be done away with under pressure from the business interests and the traveling public.

Incidentally, it may be said that it is a very great temptation to underpaid consulate clerks to secure visés for people in return for liberal compensation, and it is very doubtful whether an abuse of this kind can be entirely done away with. If an American visé can be secured for a foreign passport at some minor consulate office on the Continent, the traveler can proceed to England, and from there proceed to the United States without applying to the American consul in London, where the office is thoroughly well controlled and they are in a position to discriminate as to desirable and undesirable travelers. Very few smaller consulates on the Continent have any check as to the character of the men who apply for permission to go to the United States.

GREAT BRITAIN—AVERAGE AGE OF OFFICERS OF H. M. NAVY ON PROMOTION.

Source: Reliable.

(14149.)

20 May, 1921.

Rank.	Age on promotion.		Retirement age.
	Yrs.	*Mos.*	
Admiral of the fleet	61	..	Compulsory retirement at 65 years if 5 years have been completed.
Admiral	58	..	Compulsory retirement at 65 years.
Vice admiral	55	..	Do.
Rear admiral { 1919	50	2	Compulsory retirement at 60 years.
Rear admiral { 1920	49	1	
Captain { 1919	39	3	Compulsory retirement at 55 years.
Captain { 1920	38	11	
Commander { 1919	33	8½	Compulsory retirement at 50 years.
Commander { 1920	34	1	
Lieutenant commander	30	6	Compulsory retirement at 45 years.
Lieutenant	22	6	
Sublieutenant	21	0	
Midshipman	18	0	
Naval cadet on entry	13	6	

AMERICAN-BRITISH RELATIONS.

Source: Reliable.

(5132–C.)

5 June, 1921.

There is from time to time considerable loose talk in the newspapers of England and of the United States as to possible armed conflict between the two countries. It may be stated at the outset that while it is impossible for any human being to say that a thing can not happen, it is certainly possible to say at the present time, and at least for some time to come, that such a conflict is beyond the realm

of even the slightest probabilities. It would not really be too much to say that such a conflict was an impossibility. The Governments of both countries are fully convinced of this, and the well-balanced minds of both peoples are in accord with this view. Inasmuch, however, as considerable discussion has arisen, largely through German or Irish instigation, it will perhaps be useful to analyze the situation from the English point of view that the American authorities in Washington may be able to discount sporadic outbursts of ill will toward America which are met with in the British press and in the speeches of prejudiced or ill-informed people. A few notes, therefore, upon the actual situation as it is found to exist in the United Kingdom and an analysis of the views of the average Englishman in all classes may perhaps be illuminating.

Occasion is also taken to call attention to the necessity of avoiding most of the inferences which might be drawn from the experience in the recent Great War in considering any situation which might arise between the United Kingdom and the United States which would threaten to bring about an actual clash.

The present financial situation in the United Kingdom from a national point of view is bad. National and local public loans are competing with each other and of a recent flotation of housing bonds at least 70 per cent was left on the hands of the underwriters. One of the reasons for this is the almost simultaneous issue of an exchequer loan by the British Government which was fairly successful, but apparently at the expense of all other effort to raise money for public purposes. The present low rate of exchange with America hampers industry. Experts state that the pound sterling must be worth at least $3.80 in New York to make it possible for Great Britain to buy raw materials in America with which to manufacture for export at a profit. As the pound sterling has, for some time past, ranged between $3.30 and $3.50, there is evidently a serious discrepancy. Owing to the depreciation of continental monetary units as compared with the pound sterling, English industry possesses some advantage in purchasing from continental sources. So far as domestic trade is concerned, the rate of exchange does not seriously affect the British manufacturer, as when the pound sterling depreciates, he simply adds on to the price of the goods sold within the United Kingdom. This, of course, can not be done in export trade where these goods must meet any competition with goods from other countries. There is apparently plenty of money within the United Kingdom and money is available at comparatively reasonable rates of interest for almost any purpose. The late Jacob Schiff made a statement that at no time in history had any nation ever been prevented from going to war by reason of lack of funds. Should England engage in war against the United States it is probable the British Government

would be able to finance all affairs within the United Kingdom with paper money, would be able to mobilize a considerable amount of gold if required for export, and would very probably be able to borrow or obtain credits in nearly every continental country. Large credits could also be obtained in the British oversea possessions and spheres of influence.

In brief, it is not believed that Great Britain's apparently bad financial condition would prevent her from engaging in any war forced upon her, but it would be difficult, if not impossible, for the United Kingdom to raise any considerable amount for a war wherein Great Britain was the aggressor. It is equally probable that a war, even if forced upon Great Britain at any time during the next few years, would leave the British Government in what might well be a hopeless financial condition at the end of military operations.

The banking interests of the United Kingdom are even now in a most pessimistic mood as to the ability of the British Government to successfully weather the present situation, even if no burdens are placed upon the exchequer other than those already undertaken.

The industrial situation in the United Kingdom at the present moment is extremely bad. The country has been for some time passing through a liquidation in materials. This liquidation was in a fair way of being accomplished when the question of the liquidation of wages arose to complicate the whole affair. At the present moment the country is attempting a liquidation of the wage situation. The wage earners of the country are clinging with desperation to the abnormally high wages which were paid during the war and since the armistice. The price of everything else is showing a tendency to decrease, and, naturally, wages would have come down with this general decrease had not the labor unions of the United Kingdom banded together in a semipolitical movement to prevent such decrease. With the coming of Government decontrol and the resumption of competitive effort in industry both at home and abroad, it soon became apparent that the cost of production must be reduced, and the only way to reduce it was to bring down the general level of industrial wages in proportion to the decrease in the cost of raw materials and the cost of living.

The outcome of the present struggle is inevitable. The wage situation will be liquidated, but the struggle is severe, and just how long it will be continued before a solid foundation is reached and industrial activity is resumed no man can say positively.

The strike of the coal miners has now been in effect for about seven weeks, and it is probable that the strike up to the present time has cost the people of the United Kingdom nearly £2,000,000,000 and has practically insured a period of depression which will

take months to overcome; in fact, it is very doubtful whether it will not be at least a year before British industry can again be said to have reached a normal state. The present controversy will probably be settled during the next three or four months and in time to take advantage of the increased activity in trade which generally comes in the autumn. The industrial and parliamentary leaders of the country are fully convinced that the matter must be fought to a finish now, and that if this is not done it simply means prolonged unrest and loss to all concerned. The politicians are rather inclined to offer expedient remedies. These efforts are deprecated, not only by employers but by the workers themselves, as they feel that there are certain principles at stake which must either be carried to a successful issue or else abandoned before conditions can become anywhere near normal. The whole labor situation in the United Kingdom at the moment is in a state of flux, and the effect of what is now being done can only be estimated with any accuracy some time in the future.

All of these matters have a bearing upon the facts which are hereinafter stated and the deductions which are made from time to time, as they must be taken into consideration in discussing any problem such as is involved in the relations of two great nations such as the United Kingdom and the United States.

The last occasion on which the British Government apprehended any immediate danger of war with the United States was during President Cleveland's administration and in consequence of his famous message in regard to Venezuela. No actual mobilization of troops took place in consequence of this scare. The navy was partially mobilized, however, enormous quantities of stores and ammunition were sent to British ports, notably to Plymouth, as being the natural base of naval operations against the United States. The officer then in command of the Plymouth forts informed the writer some years afterwards that such operations as were made were lacking in orderly sequence and did not conform to any general plan which had been prepared in advance to be carried out in case of such an emergency. He stated that the only preparation so far as was known at that time was the hasty assembling of a considerable number of warships and an indiscriminate gathering of ammunition and supplies at Plymouth, the whole affair being carried out in such a way as to produce congestion and confusion, rather than suggesting any well-defined plan emanating from the Admiralty or the war office.

Before the United States came into the war against Germany, incredible as it may seem, there was a large number of people in the United Kingdom either convinced or else feared that the United

States was about to come into the war on the side of Germany. There is no reason to believe that the responsible officials of the British Government or members of the higher command in the army and navy considered any possibility of finding the Allies at war against the United States, but so general was the belief among the people of the United Kingdom that this was a possibility, and so many adherents of this idea were to be found among the lower grades in the navy and army it is more than probable cognizance of such an eventuality was taken by the British Government in its war plans immediately prior to April, 1917. Under the circumstances existing at that time, these plans, if there were any, must necessarily have been purely of naval character. It is believed, however, by Americans who were in England at that time and who were in a position to feel the pulse of the British Government that such a contingency as the United States going to war on behalf of Germany was regarded as unthinkable and therefore unnecessary to be guarded against. It is also doubtful whether such a possibility was included in the making of even the most elaborate precautionary plans. No steps were taken to actually prepare for a possible war against the United States. The whole resources of the United Kingdom were then involved in the struggle against Germany, and the United Kingdom was largely depending upon the United States for her supplies of food and fighting materials.

All estimates as to oversea troop transportation and British tonnage available therefor based on the experience of the late war are comparatively of little value for the reason that the bulk of British mercantile tonnage used for the transport of food was employed on the Atlantic and would not be required for that purpose in case of war between Great Britain and the United States. Broadly speaking, it would not be a question of available tonnage for the transport of British troops to the North American Continent, but rather it would be a question of furnishing troops to fill the transports available; in other words, there would be far more tonnage available than troops to transport. If it were possible, under conditions such as prevailed during the Great War, when 60 per cent of the British tonnage was employed in food transport, to send 500,000 men a month from Great Britain to the North American Continent, it would be possible to ship at least 1,000,000 men a month from Great Britain in case of war with the United States if that number were available and assuming conditions on the Continent of Europe to be more or less normal. It would be manifestly impossible for Great Britain to supply the flow of British troops necessary to keep available transport employed.

As stated, the British Admiralty estimated during the late war that 60 per cent of the seagoing tonnage was necessary for food

transport during the Great War. The situation changes entirely, however, in case of war between Great Britain and the United States. It is reasonable to assume that the Continent of Europe would have regained a practically normal status, politically and economically, prior to such an event as is suggested. The bulk of the larger tonnage ships used for the transport of food to Great Britain during the Great War was employed on the Atlantic. Allowing that the same number of ships plied between the Near East, Australia, and South Africa to Great Britain as was employed during the Great War, this would still leave all the tonnage then engaged in food transport from the United States to Great Britain free for military transport in case of necessity.

Some years ago Andrew Carnegie, in an article published in the North American Review, stated that England could be starved out by America in 30 days. The absurdity of such a contention was quickly demonstrated during the Great War, for the resisting power developed by every country in the world, and notably by the United Kingdom, was infinitely superior to any previous estimates. In the first place, home resources are directed along lines of necessity rather than luxury, and these resources are increased, not only by the free will of the people but through Government mandate. The nation is rationed, thus reducing materially the consumption of all articles which are of necessity imported. In case of war between Great Britain and the United States, allowing that occasional food cargoes could reach the United Kingdom from Canada by escaping the vigilance of the enemy, the trans-Atlantic traffic in food would practically cease. If the enemy of Great Britain were sufficiently alert it is even possible that a large amount of the traffic between Africa, Australia, and the East would also be suspended or interfered with. The United Kingdom would turn naturally for supplies to the Continent, and assuming that all continental countries to be at least neutral and normally ready to profit by a neighbor's necessity, the people of the United Kingdom could draw indefinitely upon the Continent for food and other necessaries of life. The English Channel and the North Sea would be an open highway and the vessels employed would be of small tonnage. Speaking broadly, if Great Britain and the United States were at war, it would be practically an impossibility for the latter country to cause the people of the United Kingdom any disabling inconvenience for food, certainly not for a considerable period of years.

The figures of imports of foodstuffs and other necessaries for 1918 do not represent a normal state of affairs. The figures of 1913 would be more illuminating. During and since the war the Continent has not been producing as in normal times and Great Britain has had to go to the United States, Canada, and the Argentine for a larger pro-

portion of foodstuffs than under normal conditions. With Hungary, Rumania, and Russia restored to productive state, it would not be necessary for the United Kingdom to go to the United States for any grain whatever to enable her to carry on. The question of meat supplies is not so simple, but it is presumed every effort would be made to keep open the Australian route, and as was proved 10 years ago during certain period of restricted imports from America the Continent was able to develop meat supplies with extraordinary rapidity and to a great extent. This, of course, is one of the articles which is severely rationed in periods of stress, thus easing the situation to a great extent. In the matter of fats, the small percentage imported from the United States could be replaced by importations from the Continent. With German industry in operation, that country would supply beet sugar to take the place of cane sugar now brought from Cuba and elsewhere, sugar also being severely rationed. The tea used in England all comes from the Near East, and England would probably be able to keep this highway of sea commerce open to traffic. The supply of fish is a matter of local industry. In brief, there is hardly any item of food, with the possible exception of meat, which could not be secured from near-by bases of supply without serious inconvenience for a considerable period of time.

In the supply of raw material for the manufacture of munitions, copper, nitrates, petrol, and cotton are the four articles which would take considerable ingenuity to secure from other than American sources. There are considerable stocks of copper, however, now in England and the Continent, and these would be undoubtedly increased at the first sign of any necessity therefor, and there are undeveloped copper supplies in Russia. The fact that Great Britain is dependent upon South America for her nitrates is the reason for the recent development in the fixation of nitrogen industry. There is one plant now successfully operating in the United Kingdom and others contemplated. The cotton situation would be a serious matter for Great Britain, but as stocks of cotton would be used only for munitions, and certain surplus supplies could be drawn upon from the Continent, it is doubtful whether there would be any serious lack of raw cotton for a considerable period after imports from the United States had ceased. The petroleum situation is probably giving the British Government more concern than anything else, and to the present dependency upon the United States for a large percentage of the supplies is due the extreme activity of the British Government in developing new sources of supply and of obtaining control of oil territory in the Near East, northern Africa, and elsewhere.

Careful consideration of the transport problem which would present itself to Great Britain in case of war with the United States leads to the conclusion that through no shortage of food or raw material in

the United Kingdom could America hope to hasten the termination of war between the two countries within a reasonable number of years.

The present Government of England is being conducted under a coalition of the Unionist-Conservatives and the Liberals, assisted by a few Labor members and in some directions by certain Irish Nationalist members. The normal division of parties in the United Kingdom is Unionist-Conservative, Liberal, Labor, and Irish Nationalist, with a few straggling members of Parliament representing divergencies of opinion in one or other of these large divisions, including one Communist, Col. Malone.

The attitude of these parties, as such, toward the United States commercially is governed by the avowed policy of building up British industry first and rendering import subordinate to manufacture for home consumption and for export. The Coalition Government leans toward a protection policy, which has been inaugurated under the guise of the necessity induced by war conditions and the need for temporary protection of British industries; also on the plea that all the revenue possible consistent with England's fiscal policy should be derived from the customhouses. Before the war Germany was the greatest trade rival of the United Kingdom, and the success of Germany in foreign markets induced envy, suspicion, and hatred. This attitude of mind contributed much toward bringing about the war which began on August 4, 1914. With Germany prostrate, a certain amount of this envy and trade jealousy has been transferred to the United States. A similar feeling prevailed before the war toward America, but the antagonism toward Germany so overshadowed the antagonism toward America that the latter was practically negligible.

The English trading and business community has always been of a proud and independent nature. England was the creditor country of the world, and the figures of her foreign trade and the amount of her exchanges justified the belief of the average business man that British influence was dominant throughout the world and would continue. The fact that the United Kingdom is now largely in debt to the American Government and also to private banking interests; the fact that the pound sterling, which for so many years held its par value in gold throughout the world, is now at a discount in American money, hurts the pride and irritates the British business man, these being the natural manifestations of human nature. Allowing for this jealousy, envy, irritation, and a certain degree of antagonism induced thereby, and allowing for the avowed determination that British influence shall again dominate the foreign markets of the world if it be within the power of the British Government and the British people to restore it to its original prestige, it can be said with truth that the

attitude of the leaders of the political parties and the leaders of the industrial and financial world within the United Kingdom is that of respect and consideration for the industrial and financial friendship of their opposite numbers in the United States. So long as Mr. Bonar Law is leader of the Unionist-Conservative forces of the Coalition Government and the principal adviser to Mr. Lloyd-George in business and financial matters, the Coalition Government will do everything in its power, not only to remain friendly with the United States but to seek the cooperation of that country in many directions in international affairs. Mr. Bonar Law is primarily a banker and business man and probably has a clearer conception of the international and reciprocal character of trade and finance than most politicians.

It may be said that the attitude of no one of the political parties as such is unfriendly to the United States; in fact, quite the reverse. There are individuals within these parties—practically all of them—who are distinctly anti-American, not only in their personal feelings, but in their utterances. There are more such to be found in the Unionist-Conservative ranks than in the Liberal and other political sections which incline to the left. Among the more earnest supporters of Mr. Lloyd-George, the present prime minister, are to be found men like Lord Beaverbrook, formerly Max Aitkins, of Canada; Grant Morden, M. P., Canadian; and Lord Birkenhead, formerly F. H. Smith, all of whom are distinctly unfriendly in their attitude toward America and American affairs. Edward Carson, M. P., may also be designated as anti-American owing to his resentment at alleged American interference in Irish affairs. Whether this unfriendliness would go to the point of advocating war with the United States is another question, for they are all shrewd men of business and politics, and unless they thought such a war would be successful and redound to the profit of the Empire and the numerous enterprises in which they are personally engaged they would probably disclaim any such idea as being beyond the bounds of possibility.

The influence of the press in England for or against war with the United States could be considerable if exerted in either direction. Recent changes have taken place, and these changes may be said to be in the direction of Anglo-American unity rather than dissension. The avowedly anti-American papers are of secondary importance and of no literary standing. The Daily Express, which shows a hardly concealed animosity toward American affairs, is an enterprising and prominent daily paper controlled by Lord Beaverbrook. There is nothing printed in this paper, however, to which serious exception could be taken. Its anti-American attitude is only shown in its general policy and in scarcely concealed innuendoes. Papers

like John Bull, owned by Grant Morden and edited by Horatio Bottomley, are virulent anti-American, but, while they have a certain influence upon a large number of readers through constant reiteration and the creating of an atmosphere, they do not swing any large body of public opinion.

The power of the press in England is very great. There is no question but that the papers owned or controlled by Lord Northcliffe at least hastened the coming of the war with Germany. For years preceding 1914 the Northcliffe press hammered at the British public in its endeavor to create hatred and suspicion toward Germany and all things German. Lord Northcliffe owns and controls about 80 publications, ranging in character from the Times, of London, the most dignified and probably the most influential newspaper in the world, to a publication called Answers, which has an enormous circulation among working classes and consists merely of quotations and of answers to questions written to the editor by the public. If Lord Northcliffe should decide in his own mind that a war with the United States was inevitable, it is possible that he might bring about such a war within a period of five years by employing this interval in creating anti-American sentiment, prejudice against Americans and America, and suspicion of American national and individual motives. It would not be as easy, however, under present conditions for even such a powerful publicist as Lord Northcliffe to bring this about as it would have been before 1914, not because America fought in the war with England, but because of the widespread, almost universal demand among the people that there shall be no war. The labor interest is distinctly opposed to war and the labor influence in public affairs, including the press, was never greater in the United Kingdom, and is destined to become still more powerful as time progresses. Fortunately for the situation, however, Lord Northcliffe is strongly in favor of the Anglo-American rapprochement; in fact, it is his present hobby. He is going so far at the present time as to make important changes in the managerial and editorial staffs of important papers to insure control by men who understand the American situation and to secure guarantee that a due amount of space will be given to American affairs, treated in an intelligent and sympathetic manner. The importance of this influence in maintaining and promoting good relations between England and America can not be overestimated.

To the casual American visitor in England, America and American affairs do not appear to have a good press in England. Many sneers on American politics, foreign policies, and American traits will be found scattered through the newspapers of the day, regardless of their political affiliations or their attitude toward the United States in matters of large policy. This apparently bad press can not be taken too seriously, however, in judging international rela-

tions. English life is so concentrated, leading publications are so comparatively few, and the political life so central as to bring all such things to one market and thus give the false impression as to quantity. Every day in the United States the press has as many or more unkind things to say about England, but these are so scattered and ineffective as they relate to the whole nation that they escape giving the impression of equal importance to the same number of things of the same character which might be printed in the English press during a similar period of time.

There is probably no question of American internal policy which would actually lead to a war with Great Britain. There are several matters, however, which might cause friction between the two countries and even lead to serious international controversy and possible retaliatory treatment along narrow lines. Should America carry out the proposed suggestion of discriminating in favor of American vessels using the Panama Canal, or discriminate in favor of goods carried in American ships, or in any other way place British foreign trade at a disadvantage with American foreign trade, it is not possible to foresee just how far such a controversy might go. Under present conditions the British Government might yield to American demands to a considerable extent, but there is a point beyond which it would be difficult for any British Government to go and retain approval on the part of the majority of the people of the United Kingdom. Such matters as mentioned contain within them the germs of serious international controversy, which, if cultivated and developed, might assist in time to lead to a breaking point. It would require, however, a considerable accumulation of such instances to destroy or make impracticable the present desire and intention of the British Government to maintain peaceful relations with the United States. It must also be borne in mind that there is an arbitration treaty in force between the United States and the United Kingdom which would, through its provisions, provide a way out of most controversies.

As generally regarded throughout the world, the Government of the United States holds to no consistent foreign policy other than the Monroe doctrine as applied to the North and South American Continents and a negative position toward the affairs of the world outside of these two continents. There will be no controversy between the British and American Governments over the Monroe doctrine, as that is a principle which has been fully acknowledged by the British Government for some years past and there is no apparent intention of attempting to change this position. Unless America, however, undertakes to take some part in foreign affairs other than that of the "innocent bystander" aroused to action only when danger is threatened to the United States, the foreign offices of Europe may be led into the mis-

taken position of assuming that America, by professing no interest in these affairs, has no right to a voice in any question which may come up. It is generally admitted that, notwithstanding America's disinclination to accept a mandate for Armenia, there is especial American interest in Armenia. It is also generally assumed that American interest in China is of a peculiarly vivid character and that any important move made by the powers in connection with that country would bring quick response from the American Government as to its approval or disapproval of what was proposed to be done. It is in connection with China that English opinion has been nervous concerning the present Anglo-Japanese treaty, and it is through this nervousness that the British Government has hastened to take advantage of its membership in the League of Nations as it now stands to announce a revision of the Anglo-Japanese treaty to take place next July in order that "it may conform to the rules of the League of Nations." Under the rules of the League of Nations offensive and defensive military alliances between two members of the league to the exclusion of others are forbidden. Should America's foreign policy, as developed by any administration in power, incline to interference in Irish affairs, that would undoubtedly directly clash with the intentions and beliefs of the British Government and the British people.

There are many signs apparent that the foreign policy of the British Government is being developed as always along consistent and distinct lines. From the British Government's point of view, the most desirable world situation would be a complete entente with the United States; failing in this, England is to-day adopting a policy of splendid isolation, freedom being retained to affiliate with one or more countries for any particular purpose, selecting such countries as to fit immediate necessities. In brief, a policy of opportunism.

There are strong indications to the effect that England would welcome to rapprochement with the new Germany; first, because in the opinion of British statesmen Germany will soon again become the strongest country in Europe; secondly, to prevent any drift toward a positive entente between Germany and the United States; thirdly, to counteract, if possible, the danger of Germany drifting into an alliance with Russia and Japan.

The suggestion that Japan, Russia, and Germany may come together in the near future as a group of powers opposed to the countries of southern Europe is frequently made, in which case England would by choice remain isolated except for a possible understanding with the United States, standing ready always to throw her weight where it would make most for the safety of the British Empire and for the advancement of British interests.

Japan and England are only held together to-day by political expediency; England and France are to-day only held together by political necessity; in other words, the British foreign office is now playing a more or less waiting game, advancing wherever it seems politically profitable, but making every advance with the utmost caution and without commitments of a serious character. To a large degree the British foreign office is now influenced by the demands of the British trading and financial interests. The foreign office has attained to a degree of subordination to the department of overseas trade beyond what would have been deemed possible before 1914. The organization of the League of Nations, the authority given by political mandates, the development of territory acquired by the war, and the making of all plans for the recognition of this or that new country are largely influenced by the necessity for extending the trading and financial interests of the United Kingdom at a time when these interests must be extended to prevent what would be in effect a form of national bankruptcy. The British Empire is still going strong and is struggling back to its normal or even greater strength than ever at a faster pace than is generally realized; but the only safety for the Empire lies in this constant progression, however slow the rate may be. To stand still at the present time would mean political and financial disaster for the English people.

The doggedness of the British character and the ability of the Englishman to keep at it even when the game seems to be going against him are brought into play in this "war after the war," which is now being fought to regain a position which, before 1914, was one of dominance in all material and political international affairs.

The Anglo-Japanese question is a purely foreign question, except for its effect upon Australia and Canada, owing to the anti-Asiatic feeling in these countries. Under the present organization of the British Empire and the freedom given to those so-called self-governing Dominions, English statesmen, in advancing a policy which apparently conflicts with the policy of the overseas Dominions, retreat behind the statement that these Dominions, being self-governing, the British foreign office is bound to pursue its own policies, even though they may conflict at certain points with overseas' opinion, England acting under the rule of "the greatest good for the greatest number." Anglo-Japanese relations are, however, a source of considerable perplexity owing to the anti-Asiatic prejudice in Australia and Canada; but the argument is made to the representatives of those Dominions that the closer England can keep in touch with Japan the greater safety there is for all concerned. It is held that it would be dangerous for England to break with Japan and would make it far more difficult for the Empire as a whole to exercise a restraining in-

fluence upon Japan in any controversy which might arise between Japan and the Dominions.

The Anglo-French oil agreement in its larger phase has already been the cause of some controversy between the British and the United States Governments, but the willingness of the British Government to accede to any reasonable demands made by the United States Government is shown in the acceptance of American intervention at the Paris conference of 1919 over the oil situation. Subsequent international oil combinations, engineered by English interests, have been in the nature of private trade agreements which, while favorably regarded by the British Government, could not be objected to by another Government unless some time in the future Government discrimination was apparent against American interests. The fact that the British Government is a minor shareholder in some of the oil companies tends to maintain a lively Government interest in oil enterprises; and the situation suggests the need of constant and careful attention with full information on the part of the United States Government.

The Irish question will never become the cause of controversy between the United States and British Governments unless the United States takes some initiative toward interference. This would be resented by the whole British nation, and the British Government would have the support of the British people in resisting any American interference. The active expression of sympathy with republican Ireland and the assistance given to the republican Irish from America are already deeply resented by the English people; but those who are in a position to realize the situation make all due allowance for the exigencies of American politics, and they also realize that, although this Irish sympathy is strongly expressed, the attitude of the United States Government itself has been scrupulously correct.

Australians in England are pro-American, Canadians less so; but any Canadian antagonism appears to be inspired more by business jealousy rather than anything else. It can be said, however, that both the Canadian and Australian sentiment, as expressed in England, is more pro-American than the general level of English sentiment. Other overseas possessions of the British Empire are indifferent to America one way or the other, and their sentiment would be pro or anti American as the immediate situation dictated.

The conservative Britisher is British all the way through. He is the embodiment of that spirit of England which made the nation insular, has made it a nation of domestic and foreign traders, and has dominated the men who are sent out to establish and maintain the outposts of the Empire. He is for British interests first, last, and all the time; not much of a thinker, seldom given to extreme

opinions, slow to adopt new ideas, and, in fact, is not generally given to originating. He does not care to be bothered to think for himself and the sentiment "for King and country" expresses his religion, creed, and largely defines the area of his mental activities. He can not be underrated, however, for this apparent narrowness of vision, for there is a vast amount of sturdy courage and doggedness of purpose in his make-up, and blind concentration along certain lines of thought and endeavor produces results in the end under apparently insuperable difficulties.

He wants no war with the United States, but if his country is threatened and its contentions controverted he is for his country right or wrong. If it meant war, he might deplore such an event, but he would shrug his shoulders and prepare to do his bit as part of the inevitable.

Fifty years ago the nobility of England governed the country; today the nobility as a class is negligible, except to the taxgatherer. Within the ranks of the nobility are individuals who have proved themselves enormously capable and useful, even under present conditions, and through sheer force of character these men have remained among those who govern the country. It is necessary to distinguish between the old and the new nobility, and these remarks apply to the old nobility only. The new nobility, comprising as it does such men as Lord Northcliffe and a hundred others, among them many Hebrews, is nothing more nor less than an aggregation of the politicians, new rich, and superbusiness men. The opinions of these men as to Anglo-American relations would necessarily be individual and they would reflect the opinions of the classes from which they came and not the real nobility.

All politicians in England and elsewhere are more or less opportunists and are governed more or less by expediency. The old-time politician of England, who was such by reason of birth and inherited the right to govern, was less of an opportunist and employed less expediency in his methods than the professional politician who is out to make a career for himself. The legislator who came into power through an inheritance had his career made for him, and he lived beyond the necessity of truckling to the masses or even to the leaders of his party. It was by reason of this that the political life of England has in past years developed so much individuality. It was because of this that prominent men in party organizations occasionally shifted their allegiance from one party to another without thereby destroying their positions; and it is for the same reason that remarkable differences of opinion on important topics exist between legislators or officeholders of the same party organization. It is not an uncommon thing in England for two

members of the cabinet to speak on the same day at different places and differ materially in the Government policies they may advocate, even to the point of criticizing the action of the prime minister.

Probably no English politician, professional or otherwise, is in favor of war with the United States. He might secretly in his heart wish that such a thing were possible if overwhelming victory could be assured to British arms, but no man in English public life at the moment cherishes for a moment such a fatuous idea. It is probably safe to say that the politicians of England, as a body of highly educated and intelligent men, does not include within its consciousness the possibility of a war between England and the United States and would reject such a suggestion as being unthinkable.

The man about town is not worrying about wars of any kind except those now in progress. These are causing him a large amount of trouble and expense, in that the taxgatherer is taking for the Government a large percentage of unearned income. Before the war life in England may be said to have been absolute freedom for the individual. The man about town is weary of war restrictions and war economies; and now, two years after the armistice, he finds himself still hampered in many directions in which, before 1914, there were no limits to his activities. He is thoroughly bored with life, for life has lost much of its savor, especially to the London man about town who is the perfect type of that phase of humanity the world over.

The more or less new rich, a class largely augmented during the war, appear to be more or less satisfied with the result, except that they are now crying loudly for economy on the part of the Government to reduce taxation. It is from this class comes largely the outcry against the excess-profits tax, and, notwithstanding the many ways in which they have been able to evade it, it still demands a considerable percentage of their income. They are opposed to war with the United States or any other country, believing it would disturb them in the position they have achieved financially in the last few years. Their principal fear is the triumph of the Labor Party or a threatened levy on capital, which idea has a large number of adherents among those who are not so prosperous.

The man on the street is the stockbroker, the smaller business man, insurance agent, and the class generally known as the middlemen in the world of business. These men are opposed to war with America, and probably have no idea that there is the remotest possibility of such an event.

The same mental attitude may be attributed to the superior class of clerks as to the man on the street.

Clerks of the lower grades are now mostly concerned with being able to live upon their salaries. They are discontented, restless, and

many of them incline toward the left in their political beliefs. It is among this class that the Socialists are recruiting. They are bitterly opposed to war of any kind anywhere.

Labor as a body and individually is opposed to war with the United States, and is on record as opposed to war anywhere. The general attitude of labor toward America is more or less friendly, but the British laborer is impatient with his American brother for not injecting a larger element of politics into his labor organizations than now exists. He does not think that the labor interests of the United States are giving the British labor interests that cooperation in bringing about labor ascendancy throughout the world which would be possible under some circumstances.

The manual laborer in the United Kingdom is not a thinker. The man of the older generation is dull and apathetic, covetous of higher wages and less work, but unable to plan out a connected scheme in his own mind for a reasonable and just accommodation of labor and capital. As a class labor conceives itself as antagonistic to capital and all it represents, and its attitude toward capital and the employer is one of antagonism.

The labor radicals are mostly the younger men, and the only war radical labor is in favor of is one against capitalism, and it looks for larger cooperation with radical labor in America to bring about the downfall of the capitalistic forces. The whole body of labor in England would stand uncompromisingly against a war with the United States, and as this labor element is powerful at the present time in public affairs in the United Kingdom it is unlikely that any group of politicians would dare advance such a suggestion seriously.

There are two classes of people not included in the above summary which perhaps should be mentioned. That is to say—

The ex-service man, generally accepted as meaning the man who never served in the army before 1914, who went through the war more or less intact and is now seeking employment or is back at work on his old job. These men are extremely bitter against war because of disillusioning experiences during the war and the after effect. If the United Kingdom were threatened by an enemy, they, common with every other class of people with the possible exception of the extreme radicals, would expect to have their services utilized. It is doubtful, however, whether they would volunteer except under extraordinary circumstances. For the United Kingdom to engage in a war other than one to save its existence would be, in their opinion, suicidal folly. They are quite generally bitter and discontented, for they claim that the end of the war has brought no such peace to their country as was promised. The ex-service man who was a regular and who is now a retired enlisted man or officer does not feel quite the same way. The attitude of many of the officers

is expressed in the words of an ex-colonel who recently said, jokingly, to an American friend of his that he was now in training for the next war England would engage in, which would be a war against the United States. The American suggested in the same joking spirit that if this English colonel wanted to fight the United States he should get a commission in the Japanese Army. The English ex-colonel's face grew grave immediately and he said: "Ah, that is a different matter. If you have to fight them I am with you." His attitude was largely that of the professional soldier, or the soldier of fortune, whose sword is his career and whose services are available for any armed adventure so long as it be not against his own country; but these men are for the white race as against the black or yellow.

There is another class which has arisen out of war conditions. This class is now known as the "new poor." Before the war a family could live in England in what might be called luxury, especially in the country, on an income of between $3,000 and $4,000 a year; in fact, many people who owned homes and land in the country kept a horse and carriage, two servants, and a gardener, and the total expenses of this establishment were covered by $2,500 a year. This condition has absolutely disappeared. These people are now paying 6 shillings in the pound income tax, wages have more than doubled, the cost of everything needed for the house and for the land is more than doubled, the cost of feeding the servants is more than their wages, school expenses have increased, and nearly all incidental expenses have trebled. Families with an income of from £500 to £800 a year before the war are now in a more or less serious plight, speaking comparatively. All English people of any class send their children to paid schools, and such an education is considered a necessity. In many instances it has been necessary for the children to be taken away from school and to get their education as best may. Few opportunities are presented to such families for increasing their income, and their situation is, beyond question, the most discouraging of all, excepting that of the poorer-paid class of clerks, which is compelled to dress respectably and yet maintain itself on less money individually than is received by the laboring man who sweeps the streets and who is fortunate enough in being a member of a union which has power to enforce his claim. Many of the "new poor" would leave England, if possible, but they see no way to better their conditions in lands unknown to them. They are discontented and the socialists have made some recruits from their ranks, but as a rule they still remain conservatives, hopelessly depressed as to life and pessimistic as to the future. The attitude of these people toward the United States is one of indifference, with perhaps some slight jeal-

ousy. As for the war, they have had enough of it and the very mention of it is abhorrent to them.

There is probably no class or group of classes of people in the United Kingdom which could be aroused to demanding war against the United States for any other reason than some active aggression on the part of the United States which actually threatened the United Kingdom itself. Certain situations might arouse now latent desire in the minds of a large number of individuals within a single one of these classes, but it is extremely doubtful whether this desire, however strong, would find open advocacy.

If England went to war against the United States a hostile alliance with any other country or people in the world would be sought and accepted with eagerness, if it could be brought about.

If the English Government could make it apparent that they had bested the United States Government in some argument or procedure—in other words, had defeated American material aspirations or had advanced British interests at the expense of America, this would naturally increase the popularity of the Government which accomplished it. Any British Government, however, which exhibited a desire for war with the United States would be looked upon as having lost its balance and would probably be retired from office, not because of any sentimental reason, however, except on the part of those who are fighting war in any shape, or for any other reason, but because of the universal realization that war between England and United States would mean the breaking up of the British Empire and the probable destruction of English world power, even if it did not result, as is possible, in complete disaster to the people of the United Kingdom.

The farther you go to the Right in English politics, the more reactionary the spirit found; in other words, the Unionist-Conservatives govern themselves more by prewar precedents than do others. The farther you go to the Left the less possibility there is of England engaging in any armed conflict with a foreign people. In other words, the Liberal and Labor Parties are peacefully inclined.

It can hardly be said that there is a national determination in England to regard a war with the United States as an impossibility. There are undoubtedly many people in the United Kingdom who do not regard such an event as an impossibility and who are fearsome at the present time as to the ultimate intentions of the United States. There is certainly no advocacy of preparedness for such a war, however. The British people do not believe they could conquer America. They would like very much to be able to restrict the growing world power of America, and a great many of them find satisfaction in the

thought that America's own actions and inclinations, as evidenced for many years and especially since the armistice, are a greater restraint upon America's growth than any limitations which might be placed by foreign influence. The movement for universal service in America, the recent large naval program, and the efforts being made to increase the merchant marine are looked upon with uneasiness by those who fear American aggression in the future. On the whole, it can be said, however, that the idea of a war between England and the United States is not taken seriously by the British people, and the initiative for such a conflict would probably always rest with the United States. Lord Fisher's statement that "the question of naval supremacy between the United States and Great Britain is a thing which should never be mentioned," undoubtedly expresses the general attitude of the people of the United Kingdom, barring the extreme views of a very small minority. There is unquestionably no national intention to bring about a war with the United States. There is unquestionably some fear that the United States may at some future time invite such a conflict in the course of growing ambitions for material dominance of the world, this idea being widely accepted as the motive power of American progress. Political dominance has always been the driving power of British foreign policy, but nothing that has come from Washington since the armistice has encouraged any suspicion of American rivalry in this direction.

WORLD—HAVE LARGE SURFACE BATTLESHIPS A RIGHT TO EXIST IN THE FUTURE?

Source: Article Written by Admiral G. Schmidt.

(14414—O–2–f.)

March 30, 1921.

The following article, written by Admiral G. Schmidt, is taken from the Monatshefte fur Politik und Wehrmacht for February, 1921:

It might be concluded from the article by Admiral Scheer, "The result of English naval warfare," in No. 52 (1920) of the Woche, that large surface battleships have lost the right to exist. Admiral Scheer says: "It can not be doubted that the possibilities for improvement of submarine craft are only at the beginning of their development, while surface ships have reached the limit of these possibilities." The latter statement is not correct. The floating capacity of ships—an essential factor—and probably their speed are still capable of being increased. In any case, the speed of submarine craft, while submerged, will never attain that of surface ships.

I can concur only to a certain extent in the opinion of Admiral Scheer that surface battleships represent objects of such great value that their preservation is to be preferred to their use in battle, which was the English attitude. The English lacked a Nelson during the World War. Even though preservation of

the surface battle fleet be considered of great importance, yet it will always have to be brought into action as "ultima ratio." England would have done this, too, had it been necessary.

Admiral Scheer says, further: "Speedy submarines, which can take the place of torpedo boats in battle, but can not be repulsed like the latter, produce such an element of uncertainty in naval engagements that the artillery tactics of the ships of the line become useless. To this I would rejoin: Means will be found—submarine bombs are already in use—with which even speedy submarines, used instead of torpedo boats, can be successfully combated. In this connection the defensive measures invented and employed by England after we had restricted submarine warfare and then intensified it, as well as our losses of submarines caused thereby, must be recalled. It should further be remembered that submarines, while submerged, are scarcely able to follow the movements of the battle fleet, and that while emerged they are more exposed to attack than are torpedo boats. England escaped ruin only by a hair's breadth, and we would have succeeded in bringing her to her knees if we had put ruthless submarine warfare into effect a year earlier. Yet our successes were due solely to the fact that the operating bases of submarines were near to their field of action.

Even though the radius of action of submarine cruisers were to be enlarged to such an extent as to enable them to carry submarine warfare to the most distant waters, their bases of operation must even then not be too far away. Although the submarine cruisers may take fuel for many months with them, and although the crews may have good quarters and food, yet repairs are necessary and the crews must be given an opportunity to recuperate from their strenuous activity. Life aboard these craft will always be harder and more unhealthful than that on surface ships.

Let us suppose that war were to arise between England and Japan—friends to-day may be enemies to-morrow—and that it were to remain restricted to these two nations, which is, of course, most unlikely. Hongkong is an English naval base and a base of operations for a submarine war. Japan would have blocked, destroyed, or captured this base within a short time. The other naval bases, Singapore and Ceylon, farther away, as well as all the points on the shore of eastern Asia where England might try to create naval bases, would soon suffer the same fate. It is out of the question that England would dispatch naval forces sufficient to meet this danger. Since a submarine war can be successful only if carried on in the coastal waters of the enemy, England could not defeat Japan with her submarine forces. In a war with England Japan, with its surface battle fleet, would command not only the eastern Asiatic waters, but also those of Hindustan, Indo-China, and the South Sea. England is no longer in a position to dispute this naval supremacy from Japan. India and Australia would be seriously threatened. The object, "Asia for the Asiatics," i. e., the Japanese, would be all but attained by Japan.

It is inconceivable that war between England and Japan would remain restricted to these two nations. England would probably force her vassal, France, to participate in the struggle on her side, and America, unless it had itself declared war against England, would join Japan. The enemy of to-day may be the friend of to-morrow. Submarine warfare carried on by England and France along the western shore of the United States would meet with no more success than in the eastern Asiatic waters. The overseas supplies of America and Japan can not be cut off. On the contrary, those two countries are in a position to blockade their opponents and to ruin the overseas trade of England and France, unless the latter should succeed in getting control of the Atlantic. This could be done, however, only by bringing their surface battle fleets into action.

The supposition that the war would remain restricted to these four countries is also inconceivable. Several nations would be forced to take part in the war on one side or the other, while others would seize the opportunity to shake off a foreign yoke weighing upon them.

It may be asserted with probable good foundation that England will never again succeed in encircling an enemy to such an extent as she did Germany in the World War. One result of England's conduct of naval affairs is that hatred of England has become greater throughout the whole world than it ever was before. This hatred will cause many to join the anti-English camp.

It follows from the above that none of the four countries mentioned may with impunity desist from augmenting its surface battle fleet. England and America are far from thinking of doing so. Both are familiar with the successes of our submarine warfare and both fully realize that the submarine is bound to become one of the most deadly weapons of naval warfare. In spite of all this, Japan is endeavoring to create a surface battle fleet equal to the English one, and America is about to construct a fleet which will give it the naval supremacy of the world. The American Secretary of the Navy, Daniels, said this publicly in August of last year.

All this was brought about by England in the war which it provoked. In addition, America has become a commercial rival of England, and will prove a greater danger to English trade than Germany ever would have been. The groundlessness of the fear of the English, that the German merchant fleet might outstrip their own, is proven by the fact that the increase in the English merchant fleet from 1902 to 1914 amounted to 1,000,000 registered tons more than the total tonnage of the German merchant fleet in 1914.

America had no merchant fleet of any importance before the war. During the war shipbuilding yards and ships shot up in America like mushrooms. To-day America possesses the second largest commerical fleet in the world, inferior by only 3,500,000 registered tons to the English one of 18,000,000 tons. It will have outstripped the English merchant fleet in the near future. England will not be able to follow the growth experienced by American industries during the war, as both the mother country and its population are too small. The productive power of capital in the United States, which was already great before the war, will grow to tremendous proportions. Even the money market, which America captured from England, will hardly revert to English hands. The middleman's earnings enjoyed by England before the war will more and more fall to the lot of America.

Reference must be made here to the effect of English naval warfare in so far as it concerns the protection of private property in a future war. In reference to this, two passages from Admiral Scheer's article may be quoted, to wit: "Although efforts have been made since the middle of the last century to protect private property at sea against seizure by war ships and privateers—a standpoint advocated especially by the United States, which, for that reason, considered the Paris declaration of 1856 insufficient—these efforts have remained fruitless up to the present on account of English opposition. Although England possessed the largest merchant fleet in the world, it felt so safe under the cover of its superior navy that it did not want to relinquish the chief means of showing the enemy her power, i. e., the seizure of enemy merchant ships. The unimportant concessions which England was obliged to make in the course of time under pressure of the continental countries were disregarded in the World War." Also: "Even the last opponents in England of the inviolability of private property at sea would probably now take another standpoint did they not thereby openly admit their weakness." To this it may be rejoined that the reasons quoted in the last sentence may not be applicable to England, inasmuch

as that country has always understood how to cover with the mantle of brotherly love those of its actions which were contrary to international and maritime law.

After having recognized that it is no longer safe under cover of its fleet, England will offer no more opposition to efforts tending to protect private property at sea during war. It is even possible that it will itself agitate for a new maritime ruling affording fullest protection not only to neutral trade, but also to that of the enemy. What would be the use of such a law? It is true that England has in no war recoiled from the employment of most brutal measures, and both international and maritime law simply never existed for it, but the danger which would arise for the whole world, should England's power increase further, has never been better realized than during the World War. England has created its commanding position in the world by lying and cheating, and it will continue to operate in the same manner until it has subdued all other peoples, or until it itself is ruined.

There being no people in the world which, as the German people did, will ruin itself rather than repay evil with evil, future naval warfare, at least until England's power is broken, will be conducted as follows:

The terms "blockade," "contraband," and "continued voyage" belong to past history. The neutral flag no longer offers protection, for England abuses it. Hospital ships will be sunk, for England uses them for transporting troops and ammunition. As a result of all this, protection of private property at sea, whether enemy or neutral, ceases, and all maritime prescriptions made for humanitarian purposes become useless.

He who believes that England will change its policy as long as it retains its power, or that the above-mentioned prospects will prevent peoples from making war in future, is seeking a Utopia as much as he who believes in the fraternization of peoples. England, which has for centuries carried on only predatory wars, has never brought happiness to peoples which it enslaved, but only endless misery. That the fraternization of peoples is a vain idea must have been proven to all those who had not yet lost their belief in it by the assembly of the League of Nations, recently closed, at Geneva.

It may be objected that the danger of war is removed through the fact that England now has a rival in America, which is, at the present moment, as strong as it is itself and which will be superior to it in the near future. England will never voluntarily renounce naval supremacy. Although it has temporarily met the danger which is threatening it from America, by forming an alliance with Japan, the opposing interests between America and Japan are not so great as to preclude their removal in a peaceful manner. According to press reports, America has already met the wishes of Japan to a certain degree in the matter of immigration. America and Japan are probably much more dependant on each other than England and Japan are. The craving for friendship between the two latter countries lies decidedly more on the side of the English than on that of the Japanese. An alliance with America would be more useful to Japan than one with England. Should America succeed in destroying the Anglo-Japanese alliance, the moment would then have arrived for it to deliver the world from English pressure.

The opinion that England and America would not enter into a conflict with each other because of their common capitalistic interests is, in my estimation, wrong, despite the fact that Admiral Tirpitz, at present the greatest political thinker in Germany, expresses it in his memoirs. American capitalism will be more and more opposed to English capitalism. Both the position as a world power which England still holds and which was further strengthened by the war, as well as its still-existing naval supremacy, exercise a repressive influence on American capitalism. As a result of England's successes during

the World War, and especially of Germany's collapse, which England is trying to utilize in the most inconsiderate manner, America has lost extensive markets, and American capitalism is thereby prejudiced.

The aim which America has set itself, viz, to gain world supremacy, can, in my opinion, be attained only by a war with England.

The war between America and England in 1775 and 1778 was caused by money. The Tory ministry under George III thought that England's bad financial situation could be remedied by levying taxes on the American colonies, which were becoming more and more flourishing. This led to the North American revolution. The North Americans were on the verge of annihilation in 1776, 1777, and 1778. Only through France's support by land and by sea, through money and voluntary immigration out of hatred toward England, did they finally succeed in gaining their independence.

The World War was solely a money war. It was started by England in order to enrich each Englishman by so and so many shillings. The next war between the present world powers will be caused by money, too. Money is first in Anglo-Saxonism, and is more powerful than racial affinities. There is but one difference between the American and the Englishman—the Englishman acts on the principle, "Make money even though it requires time," while the American says, "Make money, but do it quickly!"

As answer to the question at the beginning of the article, I wish to state:

(1) The competition between artillery and armor has lasted long. The artillery was victorious, but armored ships have nevertheless not been abolished.

(2) When torpedo boats made their appearance, many persons, including experts, thought that it was no longer of any use to spend money for heavy battleships. The construction of armored ships in France was for that reason suspended under Aube. France soon gave up this standpoint.

(3) In the period between the construction of the first torpedo boat and the present time the displacement of battleships has increased three to four fold.

(4) Submarine craft will be just as little in a position to displace the battleships as was the torpedo boat.

Even though England, in the World War which it caused, attained its ambition, i. e., Germany's ruin, by its naval warfare it caused a danger for itself which it will probably be unable to avert.

ORDNANCE—BRITISH.

Source: Naval and Military Record.

(12604–B, A–2–g.)

April 9, 1921.

Access both to ex-enemy ships and to information about them, which had previously been jealously guarded, has removed many misconceptions as to German principles of construction, gunnery, etc. One of the most surprising disclosures concerns the very moderate degree of elevation given to the heavy guns of the latest German capital ships. It was accepted as certain that these guns could be fired at an angle of 25° to 30°, and Sir Percy Scott made this supposed superiority of German gun elevation the theme of a severe lecture to the British Admiralty on its incorrigible conservatism. It is now known that none of the German all-big-gun ships which

took part in the Jutland action could discharge its main armament at an angle above 16°, which gave the 12-inch 30-caliber gun mounted in the *Derfflinger* class and most of the battleships an extreme range of about 19,000 yards. On the other hand, our 13.5-inch gun battle cruisers could range up to 22,000 yards and the 15-inch gun *Queen Elizabeths* up to 24,000 yards. Had the visibility been perfect, and had the British commanders elected to make use of their greatly superior speed to keep the range open, it would have been possible to keep the enemy under fire of all 13.5-inch and 15-inch guns at a range too great for him to reply, as actually happened for one brief stage of the engagement. Whether such tactices would have produced any decisive result can only be conjectured, but it would certainly have been a most demoralizing experience for the Germans.

Some extremely interesting data on the 15-inch armament of the *Baden* were given by Mr. Goodall, R. C. N. C., in his recent paper at the Institution of Naval Architects. According to his figures, the German 15-inch 45-caliber gun had the following characteristics: Weight, 76.2 tons; weight of shell, 1,653 pounds; weight of charge, 404 pounds; muzzle velocity, 2,625 feet-seconds; corresponding range at 16° elevation, 22,200 yards. The German gun was therefore exceptionally light in comparison with the British model of equal caliber (98½ tons), and discharged a very light projectile, a higher initial velocity being thus obtained. It is interesting to compare this weapon with the 15-inch 45-caliber gun manufactured by Elswick:

	German (15-inch 45-caliber).	Elswick (15-inch 45-caliber).
Weight of gun.....tons..	76.2	98.6
Weight of projectile.....pounds..	1,653	1,925
Weight of charge.....do....	404	400
Muzzle velocity.....feet-seconds..	2,625	2,500

For very long-range firing the British piece is probably the best, and the addition of nearly 300 pounds to its weight would, of course, make its projectile more formidable. In their 15-inch gun the Germans appear to have gone back to comparatively short projectiles, the high-explosive shell being 4.1 calibers and the A. P. C. only 3.5 calibers in length. For the 12-inch 50-caliber gun they had used a 4.5-inch caliber high-explosive shell, and projectiles longer than this were under experiment before the war, but are said to have been somewhat inaccurate at extreme range.

It appears that the *Baden* could work her 15-inch guns at the rate of one round every 50 seconds when shell and charge had to be brought from remote positions in the shell room and magazine,

while with shell and charge in readiness at the top of hoist a round could be fired every 26 seconds. Rapid as is this rate of fire, it is believed to be capable of improvement. Mountings have been designed which would enable a 15-inch or 16-inch gun to be worked without difficulty at the rate of one round per 40 seconds, not merely for brief spurts, but for comparatively long periods. This factor of rapid fire from the heaviest guns mounted afloat should not be overlooked when weighing the tactical value of the capital ship against that of other types. With the improved mountings referred to, a ship armed with ten 15-inch guns could discharge at least 70 rounds, equivalent to 133,000 pounds of steel and high explosives, in five minutes.

Reports that the United States Atlantic Fleet has carried out experimental shoots, with aircraft spotting, at ranges up to 34,000 yards, convey some idea of the immense progress which has been made in long-distance gunnery in recent years. The introduction of masthead spotting is of comparatively recent date, for this system does not appear to have come into general use before 1909 or 1910, and even then its value was disputed by some gunnery experts. As late as 1913, one flag officer declared that actions could never be decided by indirect fire and that effective shooting would be possible only when the target was directly visible to the gun layers. Taking 30 feet as the average height of the gun house above the water, the hull of an enemy ship would be below the horizon at a distance greater than 7 miles. From this it was argued that 7 miles would be the extreme battle range. War experience showed, however, that careful training and suitable instruments could practically eliminate the personal errors and other complications which were thought to render indirect sighting and therefore very long-range gunnery impracticable. By this method it was found possible to register hits at 18,000 to 20,000 yards, even when firing ship and target were both traveling at high speeds. Now that aircraft spotting is being developed, the "decisive range" may eventually be limited only by the extreme range of the gun itself. Nevertheless, it is doubtful whether the most perfect method of spotting from the air would enable existing guns to hit a target of unknown speed and course at, say, 35,000 yards. Anything like accurate shooting at such great range would appear to necessitate velocities considerably higher than those obtained with the heaviest guns now in use.

The following letter, which has reached me from a well-informed correspondent, is of interest: "In one of your recent articles I noticed an allusion to Lord Jellicoe's adverse criticism of the performance of our A. P. shell at Jutland. If our projectiles failed in any respect, the fault certainly did not lie with the manufacturers, who were, and always have been, bound hand and foot by the Ad-

miralty's specifications. In passing, I may say that Lord Jellicoe's strictures are hard to reconcile with certain photographs which exist showing the condition of German ships after the battle. These supply visual evidence of the good work done by our shell, many clear perforations being visible on the thickest belt, barbette, and gunhouse armor. Moreover, evidence from German sources makes it plain that our big-caliber shell got through this armor and then exploded with devastating force. Proving grounds are not always a reliable indication of war performances, but it is only fair to mention some results that were attained in England before the war. It is within my personal knowledge that as far back as 1910 a 14-inch A. P. shell, about 1,700 pounds in weight, was sent through a 12-inch K. C. plate at the low velocity of 1,490 foot-seconds and recovered intact. In the same year a 12-inch A. P. shell, fired against a 12-inch K. C. plate with a velocity of less than 1,700 foot-seconds, equivalent to a range of 11,000 yards, penetrated the plate, backing and target, and was picked up unbroken about 3,600 yards beyond the butt. Results such as these prove that our shellmakers knew their business. I am convinced that, given a free hand as regards design of shell and fuse and nature of burster, they could have supplied the navy with projectiles which would have passed intact through the stoutest armor the Germans had and subsequently detonated with a violence leaving nothing to be desired.

OUR RELATIONS WITH THE FAR EAST.

Source: Lecture on Policy by Prof. J. Q. Dealey.

12 January, 1921.

The average American has some vague knowledge of the Monroe doctrine and is aware of the existence of a place called Europe, some of the States of which he probably could locate on the map. His knowledge of Africa might better not be tested, and as for Asia he has a faint notion that there are places called India, China, and Japan, to which missionaries are sent. Since the inhabitants of these lands are heathen and colored, they are, of course, inferior to us. Occasionally statements are made as to the age and grandeur of the civilization of these people, but on the whole such tales are classed with the Arabian Nights and the legends of ancient mythology, and are not taken seriously. In other words, our system of education almost entirely neglects the Pacific and the Orient, although our future is deeply involved in the developments of the next 50 years in the Far East.

Ancient China.

China was the center of a great civilization a thousand years before Christ, when our ancestors were savages in western Europe with

but a rudimentary civilization. The Chinese Seas were then the center of a great commerce and Chinese ships later sailed even as far west as the Red Sea and Africa, having the use of the compass some 500 years before it became known to Europe. Sea power, sea battles, and struggles for supremacy were common long before the Spanish Armada, and the naval struggles in European waters had their counterparts for centuries in the seas off the China coast.

The civilization of Europe had come in contact with the Far East through travelers and through stories about it relayed along the great travel routes extending from Peking to Constantinople and Egypt. It came more definitely in contact by sea after the utilization of the compass by western sailors and the discovery of the passage around Africa, and the later discovery of America and the passage through the Straits of Magellan. This contact, however, became less and less agreeable both to the Chinese and to the Japanese, so that about the beginning of the seventeenth century intercourse was forbidden and contacts reduced to a minimum. Concessions were occasionally made, through bribery or force, and some commerce was permissible at designated treaty ports; but, in general, China, and Japan even more, became hermit nations, satisfied with their own civilizations and in the main blissfully ignorant of the goings of the turbulent barbarians to the Far West.

United States in the East.

The American flag was first seen in Chinese waters in 1784, when a New York ship named the *Empress of China* entered the harbor of Canton, the only port in China then open to foreign trade. From that time many ships made the voyage, sailing via Cape Horn or the Cape of Good Hope, and thus became familiar with the Eastern Seas and the Pacific. The vigorous trade that developed lasted almost to the time of the Civil War, barring the years immediately preceding and during the War of 1812.

A treaty of amity and commerce was made as early as 1833 with Siam and ratified by the Senate the following year. In 1842 China was compelled through war to open up to Great Britain five ports and to cede the island of Hongkong. The United States at once dispatched Caleb Cushing to secure similar concessions, and by his tact he was able to negotiate a treaty of peace, amity, and commerce in 1844, securing almost as many commercial privileges as had been granted to Great Britain, including the exemption of American citizens from Chinese jurisdiction. This treaty was renewed in 1858 with modifications, and in 1868 the famous Burlingame treaty was signed at Washington by a special Chinese Embassy appointed for that purpose. Burlingame's constant aim in China was to use fair dealing rather than force, and it was through the confidence he in-

spired in the Chinese that the United States came to be considered by China as its best friend among the western nations. Meanwhile in 1853–54 Japan became open to western influence and commerce through the wise methods adopted by Commodore Perry, who secured a treaty of amity March 31, 1854, followed by commercial treaties in 1857 and 1858. In 1883 we made our first and only treaty with Korea, which trusted us because of our reputation in the East for fair dealing. These several treaties unitedly represent the early stage of our policy, in which we stressed "peace, commerce, honest friendship with all nations."

Immigration.

The Burlingame treaty with China emphasized the fact that the United States had an open door to the immigrants of all nations and encouraged China to send laborers to the coast, where labor at that time was greatly needed. Chinese laborers first began to come at the time of the gold era of 1849, and their services were in steady demand. There, however, already had been local agitations against Chinese labor, and almost immediately after the signing of the treaty trouble began. At Los Angeles, for example, in 1871, over 20 Chinese were murdered by a mob. Continuous agitation against oriental immigration brought about a modification of the treaty in 1880, followed by the Chinese exclusion act of 1882. Other legislation followed in the years following. The treaty of 1894 (10 years) and the congressional act of 1904 represent the last words in respect to Chinese immigration. At present only teachers, students, merchants, and travelers are admitted and naturalization is not permitted.

Friction between this country and Japan began just after the close of the Russian-Japanese war. In respect to immigrants, in 1900 there were about 25,000 Japanese in this country, almost entirely on the coast. By 1910 there were 72,157, a number exceeding that of the Chinese. The several steps in the discussion are marked by the San Francisco education ordinance of 1906, the congressional immigration act of 1907, and the so-called gentlemen's agreement of 1907–8, which was reaffirmed in 1911. California's land act of 1913 and the later one of 1920 (see copy of it in Current History, January, 1921, pp. 119–20) are typical of legislative acts aimed by the Pacific States against the Japanese. The main purpose of the act of 1920 is to prevent orientals from owning agricultural land in California, or controlling land held in the name of their American-born children. The State Department is negotiating with Japan about the whole matter of immigration, but presumably definite action will not take place until after March 4. Under the present provision of our immigration legislation, orientals of all descriptions are barred from entrance as laborers. The present census will probably show the

presence, all told, of not over 150,000 orientals, not counting those in Alaska and the island possessions.

Under our naturalization laws the Japanese, being Mongolians, can not be naturalized, and this classification of them with other orientals is a discrimination against their national and racial dignity not easily forgiven or forgotten. President Wilson at the Paris conference refused indorsement to Japan's request for an "acceptance of the principle of the equality of nations and the just treatment of their nationals." The whole matter is an Anglo-American problem, since Australasia, Canada, and now the mandate provisions respecting the former German Pacific islands south of the equator, all bar the Japanese from the shores of those dominions.

John Hay Policy.

After the easy defeat of China by Japan in 1894 the great powers of Europe got the impression that the Empire was about to break up, so that each quietly began to select its sphere of interest in China to secure leases from the Chinese Government (1898) and to come to secret agreements one with another. This movement was at its maximum during our war with Spain and was one of the chief causes for the Boxer rebellion, which blindly sought to hit at foreigners and their grip on the country. Dewey's conquest at Manila Bay and the surrender of the Philippines to the United States by the terms of the peace modified the situation somewhat. Since the United States was now an Asiatic power, it was entitled to a voice in the settlement of Chinese affairs. Following our traditional policy of friendliness to China and freedom for commercial expansion, John Hay, September 6, 1899, addressed notes to Great Britain, Germany, and Russia and later to Japan, France, and Italy, in which, though admitting the existence of "spheres" and "leases," he suggested an international agreement for the maintenance of the principle of equal and impartial trade for all nations in China (the open door), and that there be no discrimination for or against any nation in port dues or railroad charges. Great Britain approved the suggestion and the other powers somewhat unwillingly acquiesced. This policy of the "open door" was, of course, no new thing, but rather the reaffirmation of the former situation, at this time threatened by the possible division of China into spheres of influence. In passing, it may be said that the phase "open door" did not originate with Secretary Hay. It was in current use in England at this time, and our own commissioners, in negotiating the treaty with Spain at Paris, declared that it was the purpose of the United States to maintain in the Philippines "an open door to the world's commerce."

The vindictive feelings aroused by the Boxer rebellion of 1900 seemed for a time to endanger again the maintenance of China's in-

tegrity, so that Secretary Hay, July 3, 1900, addressed a second note to the powers, explaining that "the policy of the Government of the United States is to seek a solution which may bring about permanent safety and peace to China, to preserve Chinese territorial and administrative entity, protect all rights guaranteed to friendly powers by treaty and international law, and safeguard for the world the principle of equal and impartial trade with all parts of the Chinese Empire." This principle was adopted by the allied forces as the basis for the settlement to be made with China, thus securing a united guaranty of the integrity of China and the open door for the world's commerce. In the terms of peace America was able to moderate somewhat the severe terms desired by Germany, Russia, and France, and returned to China the surplus of some $13,000,000 paid in excess of actual damages to American properties. Needless to say, the policy of Secretary Hay won the gratitude at that time and since.

The three treaties of Great Britain and Japan, dated 1902, 1905, and 1911, all recognized the John Hay policy in the preamble of the treaties, and so did the Root-Takahira agreement of 1908 and the Lansing-Ishii agreement of 1917. John Hay, however, died in 1905, and in the same year Japan emerged victorious from its war with Russia. Henceforth the "open door" and China's integrity were threatened not so much by the great powers as by Japan, which became ambitious for the supremacy of the Far East. This became possible through the British-Japanese treaties, which virtually intrusted to Japan the guardianship of British interests in the East, thus allowing Great Britain to concentrate its fleet nearer home, in expectation of a possible attack from Germany.

United States and Japan.

Up to the year 1905 from the time when Japan had become open to western influence through Commodore Perry, the relations between the United States and Japan had been most friendly. Japan, like China and Korea, looked upon the United States as its best friend among the western nations, and we had uniformly taken interest in its development and were among the first to help it secure in the nineties full recognition as an equal sovereign state. President Roosevelt showed his good will in 1905 by bringing together the belligerent powers at Portsmouth to negotiate a peace, and by his helpful suggestions enabled them to come to agreement within a month. Apparently, too, he acquiesced in the practical handing over of Korea to Japan. In the war Korea had been forced by Japan to sign a treaty of alliance, in which, however, Japan guaranteed Korea's sovereignty. At the close of the war Japan, by threat and violence, extorted another treaty making that State into a protectorate. Under our treaty of 1883 with Korea we had agreed to exert

our good offices toward it if other powers should deal unjustly or oppressively with it. Korea, in its dilemma, appealed to us for help but received no satisfaction and was compelled to submit. In 1910 Korea passed definitely under Japan's sovereignty, and Japan's attempts to blot out Korea's nationality and its cruel methods of repression have aroused much anger in this country.

Korea.

Certainly our record toward Korea is not one of which we can feel proud in view of our treaty relations with that State. Presumably, Roosevelt, in the first flush of pride at having terminated the war, and with a reliance on the good intentions of Japan, assumed rather too hastily that Korea would benefit by the change. The indications at that time pointed that way. In fact, however, Japan, suddenly exalted by its success from a position of inferiority to a place among the dominant powers, developed a kultur policy of its own, and in the following years sought to outdo Germany itself in its methods toward its weaker neighbors, owing to its newer ambition to become a dominant power in the Far East. Henceforth the Japanese Government ceased to be an admirer of American institutions and preferably established its policy on the principles of Machiavelli, as exemplified in the practices of the German Empire. One of the great teachings of Machiavelli is that an ambitious state should always seem to be right and should loudly assert its devotion to justice, and its determination to maintain its pledges, but that these pledges should never be allowed to stand in the way of advantages that can be gained by deceit and injustice. Recalling that Machiavellian teaching, it may not be wise to believe too heartily in Japan's many protestations of its honor and devotion to its pledges unless its actions toward its weaker neighbors square with its claims. It is not so much how we treat our equals or superiors that interprets our character, but how we act toward those who are weaker and at our mercy. In this respect Japan can not boast of its record.

After 1905.

After 1905 the eastern situation became very complicated. The "open-door" policy of the United States and its determination to maintain China's integrity still remain as paper policies, but there is no Rooseveltian "big stick" behind them, nor has there been since 1909. We became absorbed in the Caribbean region and the Panama Canal and were more interested in watching Germany's interest in Latin America than in heeding Japan's interest in the Far East. In fact, Japan's adroit move in referring to *its* Monroe doctrine rather soothed our suspicions, since was assumed that Japan was as benevolently disposed to China and Korea as we were to the Latin States. The Philippines also demanded our attention, perhaps to the neglect of the Chinese situation. Then, too, lacking an American

merchant marine, we could not seek for commerce in the world's ports, but had to be satisfied with such accommodations as could be spared to us by nations engaged in building up their own business. Consequently, our attitude toward China became that of a capitalist seeking to invest surplus capital in foreign enterprises.

Capitalistic Investments.

Secretary Knox's proposition in 1909 for the pooling of the Manchurian railroad systems and their control by an international syndicate was of this sort, but the two parties chiefly concerned, Russia and Japan, were then secretly coming to a quiet understanding about their respective spheres in Mongolia and Manchuria, and in consequence politely rejected the invitation. France and Great Britain followed the lead of these two interested parties in this matter and also declined to give approval.

In 1911 the empire in China was overthrown and the form of a republic was established (recognized by President Wilson, May, 1913). In this same year the United States cooperated with three other powers in floating two large loans for railroad construction in China, and to that extent strengthened its influence in the East. The new republic, needing funds for reorganization purposes, sought to negotiate a heavy loan from these same four powers, and Russia and Japan in addition. After protracted negotiations China received assurance of the loan, but on terms that seemed to President Wilson to infringe on the sovereignty of China, so that he refused to indorse the participation of American capitalists in the loan, which in consequence was made by the other five powers. Wilson's point was technically correct, but lost us prestige at the time, deprived us of an excellent opportunity to further our commercial interests and to safeguard Chinese interests, and thrust the new republic into the eager arms of the other powers, each far more interested in pushing its own interests than in promoting the interests of China.

By 1918 the administration recognized this point of view and gave assurance to American bankers interested in Chinese investments that, if they would cooperate with the Government and follow the policies outlined by the Department of State, the Government "will be willing to aid in every possible way, and to make prompt and vigorous representations, and to take every possible step to insure the execution of equitable contracts made in good faith by American citizens in foreign lands." This is a most important enunciation of policy, with far-reaching consequences, and met with a prompt response.

The Consortium.

The present consortium project is the result of this new policy and it is understood has the sanction of our State Department. It is an agreement made by four powers (the United States, Great

Britain, France, Japan) to loan large sums to the Chinese Government for the development of the country. The agreement, which is in line with American policy, forbids special spheres of influence in China, provides for the pooling of existing foreign economic interests, and for the joint control of these and of loans in the interest of the nation through an international syndicate. It would virtually place China under the guardianship of these four nations and might well be viewed with suspicion by the Chinese as a violation of their sovereignty were it not for the fact that the two leading powers in the syndicate are the United States and Great Britain, and these presumably would insist on a more effective maintenance of the John Hay policy. Japanese control is possibly the alternative to this plan of the consortium.

It is not to be assumed that Japan cheerfully acquiesces in the new arrangement. It strenuously objected to the conditions on the ground that it had special rights and privileges in China, Manchuria, and Inner Mongolia, which should be secured to it apart from the consortium, but it was finally compelled to waive these claims under pressure, and, in view of the financial conditions in which it now found itself, it withdrew its objections, May 7, 1920, so that the preliminary agreement was concluded shortly afterwards at Shanghai (May 18), and formally signed October 15, by the representatives of the banking groups. The matter now awaits the approval of the several Governments and acceptance by the Chinese Government. China has not yet acted on the matter owing to the distracted conditions within the country and the lack of a unified stable government with which the banking groups may deal. The suspicion arises that possibly these troubles are fomented by one of the four powers concerned, so as to stave off the evil day, when its hold on Chinese territories will be to some extent at least under the control of an international directorate, in which the United States would have the leading voice.

War Period, Since 1914.

Japan.

In 1914 the Great War began and the United States had to formulate its attitude toward the warring States. Wilson's policy in the first two years of the war was to maintain neutrality and to keep out of the war, and on this platform he was reelected President in the election of 1916. During this period the Executive issued formal protests against outrages against neutrals or in violation of American rights, but would authorize no reprisals or action that might involve the use of force. In the Far East this was Japan's opportunity and it made the most of it. Japan, as I look at it, must have considered the whole matter very carefully and arrived at a definite policy, which may be formulated somewhat as follows:

(1) To adhere strictly to its treaty with Great Britain, to assist that country in the Pacific, and to maintain supervision over British interests in the Far East.

(2) To cultivate closer relations with Russia so as to develop a joint policy in respect to possible acquisitions in northern China.

(3) To keep on friendly terms with the United States through the delightful speeches of Baron Ishii and reaffirmation of the open-door policy.

(4) To free itself from the menace of Germany in Shantung by taking possession of that peninsula for itself, incidentally repaying Germany for its interference at the close of the Chinese-Japanese War.

(5) To get a firm foothold in China while the "going was good," trusting that the status quo would be recognized at the close of the war.

(6) Back of the whole policy may have been the thought that in case the Central Powers won, it might succeed to the British supremacy in the Far East by an arrangement whereby Germany would be given a free hand in Europe and America. With German kultur dominant in the West, and Japan's in the East, these powers might divide the world between them until the proper time came to contest for world supremacy between themselves. Perhaps the above is somewhat too fanciful, but aside from this last supposition, the other five surely seem to have their basis in Japanese action.

Demands on China.

About two weeks after the World War began Japan, having decided to enter the war, sent its ultimatum to Germany respecting Tsingtao and captured it by November. Within a comparatively short time it seized possession of practically the whole of the Province of Shantung and also seized, by arrangement, the German island groups north of the Equator. By the close of the year 1914 the chances of victory seemed to be with the Central Powers, so that Japan deemed it an opportune time to make its famous, or rather infamous, demands on China. As is usual in such matters, the demands were more numerous and more severe than necessary, so as to allow for concessions and seeming moderation. The demands were first secretly presented January 18, 1915, and when the substance of them leaked out intense indignation was manifested and vigorous protests were made. Europe, however, could not interfere, and in any case the Allies would not dare to offend Japan at that critical moment. Finally, as a concession to public opinion, Japan made its expected modifications and threatened China with war if it failed to sign the demands by May 8. After waiting as long as it dared, hoping for a protest from the United States, China at last signed.

The gains made by Japan are too numerous to give in detail, but they aimed to insure its control over Inner Mongolia, Shantung, and the Province of Fukien, opposite Formosa. On the 16th of May, so as to save its face, our Government sent identical notes to China and Japan to the effect that "it can not recognize any agreement or undertaking which has been entered into, or which may be entered into, between the Governments of China and Japan impairing the treaty rights of the United States and its citizens in China, the political or territorial integrity of the Republic of China, or the international policy commonly known as the open-door policy.

After this notable victory in beating the European powers at their own game, Japan apparently deliberately fomented trouble and discord in distracted China, securing by bribes from puppet governments, seemingly brought into existence by its own agents, concessions and privileges in return for loans at usurious rates of interest. During the years 1917–18 it is said to have loaned or invested some $275,000,000 as against a total of some $25,000,000 up to the year 1914. Having so firm a hold on the country through its demands, loans, and concessions, it is easy to see why Japan looked with dismay on an international consortium, the control of which would be held by the Anglo-American nations.

Bargaining with the Allies.

Japan, having apparently firmly established itself in China, now proceeded to make its position secure. The Allies seemed to suspect that Japan might withdraw from the alliance and join the Central Powers, so that they were prepared to make concessions. Perhaps Japan intentionally fostered that suspicion by asserting so often that it never would desert the Allies. On July 3, 1916, it made a secret treaty with Russia, promptly communicated to Great Britain by Japan, providing for a joint alliance against any third party that should seek political domination in China contrary to the interests of either Japan or Russia, the third party presumably being a victorious Germany. This was a tacit recognition of Japan's newly acquired rights by one of the chief Allies and tended to hold Japan within the allied forces. In the dark hours of early 1917 Japan again came forward with demands, and secured from the allied powers secret treaties to the effect that they would supports its claims to the German islands north of the Equator and to Shantung. In the fall of the same year eloquent Baron Ishii secured the Lansing-Ishii agreement, whereby the United States acknoweldged Japan's special interests in China. This agreement was made, we were told, so as to help hold Japan on the side of the Allies. The "special interests" were not specified nor defined, and naturally the Japanese interpretation does not harmonize with that given by Mr. Lansing, who had the impression he

was indorsing a mild form of a Monroe doctrine. Japan, having thus made careful provision in all directions for the future, settled back to await with calmness the coming of peace and the peace table. The collapse of Russia and the rise of Bolshevism disturbed its plans in part, forcing it, not unwillingly, perhaps, into the Siberian maritime Provinces of its former ally, so as to hold these against Bolshevism and perhaps to retain them permanently. At the council table of Paris, Japan received payment for its precautions and services, since Shantung was left in its possession and the German islands were turned over to it in mandate.

Present Situation.

It is possible, however, that the war ended too soon for the full accomplishment of Japan's purposes. It had not succeeded in establishing itself firmly in its new holdings, and, furthermore, had subsidized too heavily its own merchants in many rash commercial and manufacturing projects. The close of the war brought back its old competitors into the fields of commercial and manufacturing enterprises, and the enormous prosperity enjoyed by Japan during the war soon slackened and then in the past year, beginning in March, came down with a crash. Financial crises, depression of business, and dwindling trade are making deep dents in Japan's confidence, and this situation will likely last throughout the present year. The nation feels more humble, it is not so sure of its supremacy, it dreads the possibilities in the new consortium, and begins to realize that it stands alone in the world, without a friend, hated by China, suspected by the United States, and no longer needed by Great Britain for the protection of its eastern interests. Financially it could not stand for long the expenses of a war, and yet would find it hard to borrow money, especially if the war were against the United States. Though apparently feverishly strengthening its naval power, this is presumably as a precaution against attack or in defense of its Chinese interests. Japan, on the whole, has not a cheerful prospect ahead of it, even though it seems to be so preeminent in eastern affairs at the present time. Much, of course, depends on the renewal terms of the treaty between itself and Great Britain. The treaty expires July 13, 1921, and is to be renewed at that time, but so far, at least, the provisions of it have not yet been agreed on.

The British-Japanese Treaty.

The first agreement, concluded January 30, 1902, was really aimed at Russia. Japan was planning to fight for Korea against Russia, and England's part was to keep Germany from taking a hand in the struggle against Japan. England, in consequence, began to concentrate its fleet nearer home, leaving to Japan the guardianship in

the main of British interests in China. In the treaty the two powers recognized the independence of China and Korea and also the special interests of Great Britain in the one and of Japan in the other. By the agrement each pledged joint defense of these interests and the maintenance of strict neutrality in case the other should become involved in war with a third power, and also agreed to join it in war if two or more powers should unite in hostility.

After the successful outcome of the projected war, the treaty was revised August 12, 1905, by recognizing Japan's rights in Korea and extending Japan's Asiatic responsibilities to India, whose frontier claims (against Russia) were guaranteed. By 1911 these boundary claims had been adjusted and the treaty was renewed for 10 years July 13, 1911, but with the stipulation that if either of the contracting parties should conclude a treaty of general arbitration with a third power it should not be obligated under the treaty to war with that power. The United States at that time was negotiating such a treaty with Great Britain and at the same time had developed friction with Japan. The stipulation, therefore, was England's safeguard against being drawn into a war against the United States as an ally of Japan's.

This treaty with Great Britain, now in force for nearly 20 years, has unquestionably been helpful to both nations and especially to Japan, since it enabled it to fight a successful war with Russia and gave it security against a combined attack. Both parties have expressed their willingness to renew the alliance, but seem somewhat puzzled as to the provision of the new treaty. Japan desires an alliance that would work even against the United States, if necessary, and also desires an admission of racial equality in matters of immigration. Lacking these provisions, under present circumstances the treaty would have no meaning to Japan. On the other hand, Great Britain has no desire to run any risk of being drawn into a war with the United States, nor does it wish to offend the Dominions in matters affecting immigration. Nor, in fact, is there any real further need of Japan's help in Asiatic matters, except possibly in the case of a revolution in India. It is not likely that Japan would care to be allied with Great Britain in suppressing a revolutionary India, since Japan wishes to be considered as the exponent of the oriental races. The situation really furnishes a splendid opportunity for the United States to come to some sort of an agreement with Great Britain in respect to the Far East and the Pacific, and possibly it is expected that the Harding administration may express its policy speedily, so as to enable Great Britain to determine what can and can not be done. At any rate, the terms of the treaty, when renewed, will surely be deeply significant as an indication of the

postwar policies of Great Britain and Japan in respect to the Far Eastern situation.

United States at the Parting of the Ways.

As for the United States in respect to the Far East, it may be well again to assert that we are at the parting of the ways. If the John Hay policy is merely an empty word, and China is allowed to fall apart into spheres of interest, it is probable that Japan will be able to assert and maintain its special interests in that region and become dominant in its affairs. All the signs point to the fact that Great Britain will have all the trouble it wants in the nearer East and India, and, unaided, can not give much attention to China. This must be done either by Japan or the United States, and the treaty of July, 1921, between Great Britain and Japan will determine which.

England unquestionably would prefer to turn over the North Pacific and China to the fostering care of the United States, provided the United States were willing to assume responsibility and to enforce the John Hay policy. Japan is now greater than ever before, but is on the edge of a precipice. If allowed a free hand in China by England, it would go on step by step toward the supremacy of Asia. If Great Britain and the United States should come to an agreement in respect to China in favor of the enforcement of the John Hay policy through the agency of the consortium, then Japan would be compelled by silent pressure to relinquish bit by bit ill-gotten hold on China and in time might even be sent back to its island kingdom. A militaristic and Germanized Japan, judging from its policy in Korea, is not a safe State to be allowed leadership in the Far East, controlling China and later allying itself with India. Yet a war-split Europe, or antagonism between Europe and the Americas, would be Japan's opportunity. The States of the west must federate together in some fashion and cease warring among themselves or some day they will be subject to a united east. Chinese civilization is inherently peaceful and should remain so under American guidance. This can be done if we join hands with Great Britain in the John Hay policy and enforce it. If, however, we cut loose the Philippines, and have a paper policy toward China, and "speak softly" to Japan, neglecting the "big stick," and turn away from Great Britain in the Pacific, then Japan will dominate the east, and the much-talked-of "yellow peril," under Japanese leadership, would come to the front. In this it might possibly be supported by a bolshevist Russia so as to spite the United States. We have the choice of "making the world safe for democracy" by an Anglo-American agreement in behalf of China or of transferring a third of the human race over to the domination of militaristic Japan. That would be the beginning of the end of white supremacy.

CHINA—POLITICAL CONDITIONS.

Source: Reliable.

(13141–H.)

18 April, 1921.

There seem to be two reasons for disquiet in China. The first is that some of the large numbers of unpaid soldiers in the country may take it into their heads to collect their own pay from their neighborhood, with the result of pillage and disorder going on to almost any kind of license and chaos. But not many people seem to be disturbed by this kind of alarm. For the second reason the greater number are of opinion that hostilities will result from a clash between military leaders in the effort of one of them, or one combination, to seize control at Peking and make it more complete than the present holders of office have been able to effect. The one most prominently spoken of, as you know is Chang Tso-lin, who is expected by many to intend to try conclusions with Tsao Kun or his virtually controlling assistant, Wu Pei-fu. Chang is already the most important man in north China, but the Government which he intimidates is not directly under his control and has made such ducks and drakes of its financial administration that it is said to be now unable to get money to actually carry on and to be in such consequent discredit that a vigorous push could topple it over and land the pusher on top.

You have heard the talk of Chang Tso-lin's intention to restore the Empire, and it may be that he will use the restoration as a rallying cry to add the support of such public opinion as exists to the military power, which would be his real reliance in an attempt to seize power. It would be difficult for him to find any other plea in extenuation of usurpation, since he can make no constitutional claim, under the alleged republic, to a right of succession to the presidency, while it is possible for him, or anybody else, to say that the Empire was lawfully overthrown, and perhaps to get the adherence of the many who rightfully think that China is not ready for republican government, and erroneously suppose that a restoration of the imperial form would bring back the habit of obedience, which has suffered a rude shock through the demonstration that the Emperor is not endowed with any mystical and supernatural power to punish those who oppose him. Of course, in case of restoration the Emperor would exercise no more power than he does now and would probably not be consulted as to whether he wanted to be restored or not; but the real authority would be exercised by Chang and his group, under a regency, until such time as they could make another change which would perpetuate them. Some people in the legations here think that the publicity and discussion which have been given the supposed scheme have made it impracticable and that the squall has blown over, but the same ones believe that some other kind of assault will soon be hatched against the discredited Government.

Whether the overthrow of the present Government would be an advantage or not would depend on what should replace it. It is bad enough to merit being turned out. But there being no power in the country capable of maintaining in authority a Government in the interest of the people, it must be accepted that the Government will be some kind of oligarchy, composed of leaders with a military following who can pool their interests and hold things down, just as the present ones do. And the best that can be hoped for is a group which will have some consideration for the country and the people and will not think exclusively of lining their own pockets, as has practically always been the case up to the present time. As the education of the people slowly progresses they will gradually acquire the power of exercising influence on the composition of the governing group, through combination under the influence of public opinion, and in the course of a century or two may arrive at real self-government; that is, the power of holding their officials to account. In the meantime, although the turning out of any bad group may be regarded with complacency, the disturbance will not be worth the cost unless the change can be regarded as the result of an effort to improve the group, which can not be said of the threatened substitution of a more regularly installed Chang Tao-lin crowd for the same kind of a set, which is now alternately dictated to and disregarded by him.

All of which means that there is no orderly government and assured stability in sight for China, and that any kind of disturbance or violence may be expected at any time. I do not see that any antiforeign feeling is apt to form an element of any proceedings which may take place; but, of course, if there is fighting foreigners will be likely to come in for their share of danger in their neighborhood.

JAPAN—FORTIFICATIONS.

Source: Reliable.

(12668–A.)

22 April, 1921.

Besides increasing the fortifications on Bonin Islands, the navy has decided to erect a fortress on Akuni Island, near Loochoo Islands. A naval defense corps will be stationed on the island on the completion of the fortification work next year.

DEVELOPMENT OF FUEL OIL IN THE PHILIPPINE ISLANDS.

Source: Reliable.

(14551.)

22 April, 1921.

The discovery of oil in quantity would, according to a reliable authority—

(*a*) End the question of independence.

(*b*) Greatly increase Japanese interests in obtaining possession of the islands.

(*c*) Arouse British interest in working against any future Japanese developments in a territory so much nearer Australia.

The director states that the present oil is high grade from a paraffine base and yielding as high as 29 to 35 per cent gasoline.

Indications as to quantity are not promising. He believes there will be enough for local commercial profit but not enough to affect international oil supply in any material degree. There are as yet no indication of extensive deposits.

The director has made several personal investigations in company with other geologists and representatives of oil interests.

Historical.

The first mention in geological literature, so far as we know, of gas or petroleum in the Philippines is found in the description of the island of Panay by the Spanish geologist Abella in the year 1890. In 1898 an oil well was being dug on the estate of Smith Bell and Co., a British concern, near the town of Toledo, on the west coast of Cebu. In this year an insurrection broke out against Spanish rule and the drillers were driven from the well, which has been abandoned ever since. It is now practically as the insurrectos left it; that is, choked with rubbish which would have to be cleared away before operations could be renewed.

About 1910 a number of Americans became interested in the petroleum deposits long known by the Filipinos to occur on the peninsula of Tayabas, in the southeastern part of Luzon, which were apparently unknown to the Spaniards. Two wells, 117 and 300 feet (35 and 91 meters), respectively, were dug, from which a few gallons of oil were pumped, but nothing of any great importance has been done ever since then, except to keep up assessment work on the properties. At the end of 1917 there was considerable excitement in the islands over the discovery of oil in the Lanao region of Mindanao Island. The existence of petroleum on that island was well known to geologists of the bureau of science as early as 1908, but they could not visit the localities owing to the state of the country.

In 1919 act 2814 was passed by both branches of the Philippine Legislature, and approved by the governor general on 4 March, providing for the creation of the National Petroleum Co

In August, 1920, the Philippine Legislature passed an act providing for the exploration, location, and lease of lands containing petroleum and other mineral oils and gas in the Philippine Islands.

BOLSHEVISM IN THE UNITED STATES.

Source: Reliable.

(11316.)

25 May, 1921.

The following letter is quoted:

I am transmitting herewith a copy of a letter from one A. Brigader, of unknown address, to Comrade D. Beika, Third International, Moscow, which was intercepted by the Lettish authorities in Riga. The letter was written in the Lettish language and posted in New York City on 12 February, 1921. It was addressed to G. Ganetzky, Hotel Bellevue, Riga, Latvia, which is the address of the headquarters of the bolshevist mission, and contained a second envelope, addressed to D. Beika.

The following interesting points are brought out in this letter:

(*a*) How the foreign elements in the United States are working against the Government and American institutions.

(*b*) That the Communists are trying to spread propaganda in the Navy.

(*c*) That the Communists are trying to cause a war between the United States and Japan and that they realize that they thrive on "war and famine."

(*d*) That the "Yankees" are not considered as yet ready for a revolution.

(*e*) That the Communists are spending large sums on propaganda in the United States.

Comrade D. BEIKA,

Third International, Moscow.

Hello, GEDERT: A long time has passed since you and the other comrades have left here. Many more who wanted to leave after you were prevented from doing so, because after the bolshevist revolution Russia was cut off from all the world. For three whole years we have breathlessly watched your gigantic struggle against the overwhelming odds of the enemy—the world reaction. Your victory has been splendid. You have broken the back of the world imperialism. The workers throughout the world have become confident and bold owing to your victory. As regards ourselves, we have been unable to take an active part in this unequal, gigantic struggle; our part has been merely passive. As far as I am concerned personally, I am constantly in trouble and fear for the morrow. I am constantly driven away from my work on account of my bolshevist propaganda. In the hotbed of political reaction, the Boston Navy Yard, I had a regular agency where I distributed a lot of literature and lectures to the United States seamen. I was nearly lynched there. Jurgis (George), too, could tell you about our adventures at that time. My son Arved was his right hand in the matter of distributing the Revolutionary Age at the factories. Then on the 1st of May, 1919, there were parades through the streets of Boston and red flags flying. Arrests; trouble. In January, 1920—arrests; trouble. In November, 1919, during the bolshevist jubilee—arrests en masse, and trouble. We knew that without the assistance of we far-away fellow laborers the Russian revolution was in deadly peril. Individual effort is like a grain of sand on the beach. We want one Communist Party, one organized center, which should take the initiative in the movement of the masses. At present we have two Communist Parties which are in deadly feud with one another.

Of course, even capitalism and imperialism are still needed in order to awaken the stupid Yankee. We want more *war*, and more *famine*. You are trying to introduce these elements into the famous Kamtchatka concessions. Bravo! There must be one more ugly crisis when a loaf of bread will cost a dollar and more. And then the Yankee will awaken. And there is where the Communist Party will have to take the initiative. It is an unwarrantable crime this

parallel existence of two Communist parties; and not only their coexistence, but their mutual deadly feud. To talk about revolution at present, where hardly 5 per cent of the Yankees are in the party, is absurd. Only one who has dropped down from the moon and knows nothing about political and economical conditions can have such a belief. Lettish comrades have done all in their power to reconcile these two parties. It was for this that we were expelled from the Communist Party. And for this reason we are the pet aversion of the "bosses" of the U. C. P. *There is no greater crime than the parallel existence of these two parties* and their mutual feud. And it is obvious that our leaders are little concerned about. Of course, it is pleasant to draw $50 per week while masses of laborers are without employment. The amalgamation business is dragging on for three months and has cost already $10,000. All agitation and propaganda during this period has been nil. Who is it who suffers through this? We, the working men, and our movement. The U. C. P. officers fear that the C. P. might swallow them up. But what will we, laborers, lose through it? We lose double expenditure, etc. Let Moscow once more say her word and put an end to this monkey business. *We stand above the heads of our leaders*, and so let us *convoke a city conference*. Those that were delegates at the recent amalgamation conference must not be admitted to the new one. During the present spring, people are returning en masse to Russia. Would it not be possible that something be done by Soviet Russia to give greater facilities to those returning?

The shipping companies are literally skinning the passengers—$150 for a third-class ticket to Libau. I think when the new president ascends the throne this might be done. This would make it possible for comrades to make better arrangements and to take with them clothes, their tools, etc., which at that end would be of great value. And if one has to go with a more or less numerous family, the voyage will ruin him for good and forever. Couldn't you make arrangements with some Scandinavian firm which would do it cheaper, and could not the Soviet Government participate in the payment? I think you are not taking sufficiently sharp measures against counterrevolution. With fire and sulphur you shall smoke them out. Milda Kalwin and Salmais are in Latvia, and are clamoring for more gallows for Communists; for you it will be equally pleasant to combat all these blacks, whites, etc. As for me, I could take these devils of the dying bourgeois and chop their heads and cook them like so many cabbages. I think we will meet this summer. I should like to look once more into the face of the country where I was born and brought up, and which first has fought out the fight of liberty. My mother-in-law, my sisters, and a brother are in Moscow, at the following address: Mylnikov Pere-oulck No. 15, are doing halfway well, and expect to see them soon. During all these long years we have had no news whatever from them.

Heartfelt greetings to you and the other comrades, and to all vast Russia.

Yours,

A. Brigader.

THE CAPTURE OF URGA BY THE TROOPS OF BARON UNGERN AND MONGOLS.

Source: Reliable.

(11461–B.)

30 March, 1921.

Following is a report submitted by the Urga representative of the Mongolian Trading Co. (an American firm), who was in Urga

during the siege and fall of the city, to the president of the Mongolian Trading Co.:

For your information I have to report on the events occurring in Urga from date of my arrival there on December 24, 1920, to that of my departure from that city on February 17, 1921. It will be unnecessary to touch upon the events of October and November which led up to the capture of Urga on February 2, as you already have full information upon this point.

Upon my arrival in Urga, in company with Mr. McLaughlin and Mr. Kunhardt, I found the town in a very upset condition. The Chinese and Russians both had information concerning a large Russian and Mongol mobilization at Zum Kuren, on the Kirulum River, some 240 versts to the east of Urga, and reports were constantly being circulated of strange patrols of Cossacks and Mongols being seen near the city. Added to this, the telegraph lines were being constantly cut near the town, making communication very uncertain.

The Chinese military commander, Gen. Chu Chi-haiang, circulated a verbal report among the foreign population to the effect that in case of an attack upon the city, he would kill every white man, woman, and child in town. He was utterly unable to pay his troops, whose pay is six and eight months in arrears, and to keep them happy, gave them carte blanche to rob Russians right and left. They entered houses on the pretext of searching for firearms and helped themselves to whatever pleased their fancy. Scarcely a day passed without one or more cases of rape by Chinese soldiers upon white women and girls being reported. It was during this reign of terror that a Greek subject was crucified and horribly tortured with red-hot irons and candles by the troops. Two other similar cases were also reported to me. The troops looted Chinese and foreign shops alike, taking what pleased them and paying nothing.

On or about January 18 I was informed by one of my own Cossacks that Baron von Sternberg, with about 2,500 Russian Cossacks and 1,500 Buriat Cossacks under his immediate command, together with 5,000 Mongols under Se Ven Kung, the Mongol commander in chief, were camped at Tulje, on the Toola River, 40 versts east of Urga, and that an attack could be expected at any time. At this time reports came in of Cossack activities on the Kiakhta Road to the north of Urga. The Chinese were evidently very much upset, as they dispatched the cavalry commander, Kao Tsai-ting, with 1,500 men and also considerable bodies of infantry and a few light guns to the north, these men going out over the road directly behind the Mongolor House. That they expected the attack to be serious was evident by the way they collected all available food and forage. Up to this time Bogda Khan was allowed to live unmolested in

his own palace, unguarded by troops, but the Chinese, evidently fearing an escape to the hills, placed a guard of 250 men about him.

On January 31 a friend warned me to expect action that night. I moved my two Cossacks to my house with their families, considering them safer than in their own small place. Mr. McLaughlin decided to stay at the office with the Russian accountant and a friend of his, and Mr. Kunhardt, who intended to stay at the house, got caught in town and was unable to return through the Chinese sentries.

At daybreak on February 1, a heavy artillery fire commenced from the hills to the northeast of Maimaicheng and continued throughout the morning, the Chinese making little or no attempt to answer it, being huddled in and about East Urga. At 10 o'clock that morning, the invaders rescued Bogda Khan in a most spectacular manner. I was watching his palace, expecting something of the sort. Suddenly, at full gallop, a force of 70 Mongols. Russians, Buriats, and Tibetans, under a Buriat colonel, appeared in the mouth of the ravine leading out of Bogda-ol directly behind Bogda Khan's palace, rushed his Chinese guard, killed 150 of them, and routed the rest. They put Bogda Khan on a horse and retired as rapidly as they came. The entire action consumed exactly one-half hour and was the prettiest piece of cavalry work that one could desire to witness. This added to the panic which was seizing the Chinese, and that afternoon Chu Chihsiang, Chen Yi, and the rest of the higher officers decided to get out to Kiakhta. The following morning they left at daybreak, just in time to save their skins, in the most approved Chinese military manner, and will probably be made field marshals for their skill and bravery in retreating. Around noon on the 1st, the gunfire ceased save for desultory shooting now and then to keep the Chinese unhappy. Troops were riding madly all over the place, but no looting to speak of occurred, probably because they were too frightened to think of it. The main body of troops stayed in Maimaicheng, totaling about 4,000, while probably 1,000 were scattered over the rest of the town, the remainder either having been sent north to Barota or having gone in that direction anyway. It was evident that Baron Ungern and the Mongols were going to take the town and were only awaiting nightfall in order to get the cover of darkness in making their attack. The Chinese sent out no patrols and evidently made no contact with the attacking forces during the entire day and were quite in ignorance of the strength and position of their main force.

On the morning of February 2 I was awakened by a roar of machine gun and rifle in Maimaicheng and on looking out saw several houses in flames and could hear Chinese cavalry riding like mad

toward West Urga. Bullets were flying about my house. In order to give you a good idea of what actually happened from then on I will repeat information which I secured from the Russian Cossack colonel who was in command of the attack on Maimaicheng.

The attacking forces were in position over the brows of the hills to the northeast of Maimaicheng and to the direct north. A small detachment was in the rear of the hills on the eastern side of the Maotaching Valley. Their captain, his lieutenant, and two Cossacks opened the fight in the following manner: There was a force of some 150 Chinese infantry posted on the Russian bridge over the Toola, but their number was unknown to the Cossacks. Therefore, this captain and three men decided upon a reconnaissance before advancing, and slid their ponies down a very steep ravine into the valley. Once down they realized that they could not get back, so they decided to go ahead and see what they had gotten themselves into. As they approached the bridge they were fired upon in the dark. Instead of retreating they drew their pistols and charged the Chinese, shooting and yelling as only a Cossack can. The Chinese never waited to see what was coming, but dropped their rifles and ran back to Maimaicheng. The captain brought his troops out by the east road around the hills and hurried around to the north of Urga to try to intercept the retreat, which he knew was imminent, but arrived about one-half hour too late to cut up the few Chinese who escaped to Barota.

In the meantime the Russian colonel, with 50 Cossacks, invaded the old square behind Maimaicheng to the north, killed the sentry with a gun butt and finished 250 Chinese infantry who were asleep there. Then he charged Maimaicheng from the north, at the same time bringing his remaining Cossacks and Mongols in from the east, set fire to two or three houses to get light, and proceeded to rout the Chinese. The latter put up scarcely any fight at all. This colonel told me that he nearly fell off his horse laughing at them. They dropped their rifles, shed their fur coats, fell off their ponies, and were so panic-stricken that they had not sense enough to surrender. A few got away, but over 2,500 Chinese were shot and cut down in the streets that morning.

During this action, which continued until after daylight, I received my delegation of Chinese troops. At just about daylight an officer and about 20 Cossacks appeared in my back compound. Around the Russian concession there were a good many Chinese troops, and these Cossacks had been in a skirmish with them. They came into my place, thinking it was a Chinese residence, but as soon as they found out who we were, were most friendly and asked for tea, which we gave them. They were out of ammunition and had

to return to the foot of Bogda-ol, where the ammunition supply was being held. As soon as they left the house the Chinese rushed down the gulley to the west and turned two machine guns loose on us. We took refuge from that fire by going into the cellar. No sooner were we underground than they rushed the house and either destroyed everything of value or carried it away with them. They took all the personal property of yourself and wife, and all of my own things, destroying what they had no use for. They also murdered my two Mongol servants and one of my Cossacks and were yelling for the American man, so there is no doubt but that they were after my scalp, and I feel certain that I recognized one of their voices as that of one of Gen. Chu's own drivers, with whom, as you know, we have had considerable trouble. Shortly after this the Cossacks returned and cleaned the Chinese out, and at about 1 o'clock in the afternoon it was safe to cross the street to the Mongolor House, where I took my people. The Mongolor had not been so badly treated, the Chinese not having time to do more than $2,000 or $3,000 worth of damage to it. They had, however, a small gun on the hill to the north of the house, and before the Cossacks could get up there and take it away from them they fired three shots into the roof, blowing it all to splinters but wounding nobody. They stopped long enough to murder more than 20 Russians near the center of the town.

Before noon the Cossacks were in West Urga, the jail being the first place they made for. They liberated the prisoners, all of whom were Russian and Mongol political prisoners of the Chinese, Gen. Chu having taken all the criminals into his so-called army. These people promptly secured rifles and joined the search for remaining Chinese troops. They wrecked the Frontier Bank, an institution especially abhorrent to them, and took out everything of value in it. In West Urga I estimate the Chinese dead to be over 500.

During this occupation and afterwards there was no looting of either Chinese or foreign firms worth speaking of and in each individual case when looting did occur the *offenders were immediately hung*. No sooner had the invaders taken possession than did they organize provost guards that worked.

The Russians lost as a result of all this fighting exactly 2 dead and 122 wounded, 2 of them of whom have since died. The Mongol losses were also very small. They took 20 French 75s from the Chinese and many machine guns. The entire stock of Chinese military stores, which was very large, was unharmed and very useful to the Mongols. In addition, there were several caravans, totaling around 1,500 camels, coming in by the west road, all of which the Russians and Mongols took from the Chinese with a loss of one man. These caravans were rich with ammunition, shells, and all sorts of military stores.

I heard on the evening of the 2d that the so-called Swiss, Albert Stephen, who had been captured by the Cossacks at the time our own cars were intercepted and one captured to the north of Tuerim, details of which you have, was in captivity at Baron Ungern's headquarters in Maimaicheng. So on the morning of the 3d I drove over there and found the Swiss in a comfortable room and being well treated. I asked for his delivery to me to take to my house and in the afternoon received him. I found Baron Ungern a very quiet, outspoken, pleasant gentleman, and conversed with him in German for some time. Later that day he called upon me to ask the whereabouts of Chen Yi, whom he had known in the old days and for whom he displayed great concern. Naturally I knew no more than he did of his whereabouts, although at the time there was a rumor rife among the Chinese to the effect that Chu had murdered him, and knowing that gentleman's instincts very well I had some reason to credit the yarn. Later on I was able from information which may or may not have been of use to him and by taking an ordinarily civil attitude to this remarkable leader was able to secure the safety of a certain family of Jews, who were suspected of having been Bolshevik sympathizers. On the afternoon of the 4th three Charhars entered our then empty residence. We had them arrested and they were hung within an hour. The following day two more went in the same direction, and that night three Cossacks who had gotten drunk raided the office and bought themselves a hangman's noose. After that, at my request, we had a guard of the baron's own bodyguard in the street about our own office and that of Anderson, Meyer & Co. (Ltd.).

During the 3rd and 4th there was considerable sniping about West Urga by a few Chinese soldiers, who had failed to make their escape and who apparently had a violent dislike for either me or my motor car, as I was repeatedly shot at coming and going, several times with Russian officers in my car. These people, however, were soon cleaned up and the town quieted.

Immediately Baron Ungern appointed the eight leading Russian merchants a committee of civil and commercial affairs and turned the governing of the Russian civil population over to them. They established a white police force at once, and at the same time the Mongols reopened the old Sangar Yamen and reestablished their old police force. They also formed a provisional government under the Ja Khan Za Gegen to function until Bogda Khan's return on the 8th instant, at which time a council of princes was held and plans were commenced for the new permanent government.

The vernacular and foreign presses here have been publishing lies to the effect that the Chinese civilian population in Urga are all murdered. Nothing could be more criminally false. During the

entire trouble the only people who murdered either Chinese or whites were the Chinese troops, who did murder many poor coolies and merchants. Neither the Russians nor the Mongols are responsible for one single instance of harm being done to either Chinese lives or property, and the Chinese in Urga to-day are safer than they have been since little Hsu and his bandit gang entered the place, and, furthermore, they are as pleased as are the foreigners that the Chinese are out of the place for good. At the present time a lady can go unattended from one end of Urga to the other without the slightest danger of molestation or insult, the city being perfectly policed. The Chinese Chamber of Commerce offered Baron Ungern a tribute of $120,000, which he refused, stating that he had his own funds and had no desire to rob them.

Business reopened in Urga about the 6th, and an order was passed to accept Russian gold coin rubles at the rate of Mex. $3.50 for ruble 5 coin, a most fair rate, as can be seen. Everything requisitioned by the troops, either Russian or Mongol, is paid for at the market rate in gold. All the coolie labor in town has been placed under the control of the Chinese Chamber of Commerce.

Anybody desiring labor requisitions through the Russian Civil Government, the head of which O. K.'s the requisition and passes it along to the head of the Chinese chamber. He allots as many coolies as are desired, and the employer has to pay the Mex. 0.25 per day and rations.

The Mongols are mobilizing a large force, equipment for which they concealed for a long time, as you probably have heard from the Chinese, very considerately brought up reserves of equipment, so that they are wonderfully well equipped for an extended campaign if they are compelled to carry on the war for any length of time, a thing which they are prepared for but do not wish. They have cleaned the Chinese completely out of the country as far south as Udde. They have wiped out the remainder of Chu's troops in Barota; they have cleaned Uliassuttai, Kobdos, and the Urianhai. Zum Beis and the Manchuria road is clear. In China I am told that the foreign powers look upon the present Mongol government as a gang of bandits. If they are bandits then the present Chinese government ought to be sent to prison on murder charges, for they are the most law-abiding, sensible bandits on record. I have read that once upon a time George Washington was looked upon as a bandit also. I have also read in international law that a revolution, having once accomplished the desired end of overthrowing one government and substituting another one, especially one acceptable to its people, that government is entitled to recognition by the powers of the world. I have also heard a great deal about a doctrine called the right of self-determination.

On the 15th of February the Provisional Mongol Government called upon me en masse. They stated that they had accomplished their purpose. They had thrown out the Chinese, who had *absolutely no right there* under the Kiakhta convention of 1915, and were willing to call a halt if the Chinese would listen to reason. They asked me if I would be willing to undertake the trip to Harbin, at their expense and under their protection as far as the frontier, to attempt to enlist the aid of an American consular official in coming into Mongolia to observe the state of affairs and through his legation to try to act as mediator between them and the Chinese. Warfare being no more pleasant to me than to anybody else, I consented, and on the 17th I left Urga in company with Mr. Kunhardt and a Mongol prince, under heavy escort, for Manchuria City, which I reached on March 5, proceeding to Harbin, where we met.

Our business is at a temporary standstill in Urga. Our outstanding and cash make a large total, and it is imperative that one of our representatives should return at once to take over from Mr. McLaughlin, who should immediately come out with all the available cash he had on hand, this being possible through Manchuria City. An American official could do much toward stopping this war now should he go in, but whether he does or leaves it to others to do we should not let our interests drag there. There is no danger on the Manchuria road. There will be no opposition from the Chinese either in Harbin or to the north. There are no Chinese troops worth worrying over in Manchuria City and there is a Mongol outpost within 20 miles.

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OFFICE OF NAVAL INTELLIGENCE.
NAVY DEPARTMENT.
Washington, D. C.

MONTHLY INFORMATION BULLETIN.

NUMBER 8—1921.

15 AUGUST, 1921.

DISTRIBUTION:

In general: Bureaus of the Navy Department; all force commanders; all commanding officers of capital ships, the larger patrols, destroyers, and submarines.

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FOR CONVENIENCE IN ROUTING.

Officer.	Initials.	Date received.	Date forwarded.
Captain			
Executive Officer			
First Lieutenant			
Navigating Officer			
Gunnery Officer			
Communication Officer			
Engineer Officer			
Medical Officer			
Supply Officer			
First Division Officer			
Second Division Officer			
Third Division Officer			
Fourth Division Officer			
Fifth Division Officer			
Marine Officer			

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GERMAN DIRIGIBLES.

Source: Reliable.

(13081-A.)

13 May, 1921.

The following questions have been answered by a German airship pilot of 10 years' flying experience. His opinions, as expressed below, can be taken in most cases as illustrating the best German practice from the operator's point of view:

1. How and when to use oxygen?

Altitude affects different persons in extraordinarily diverse ways, according to their state of their nerves, and their general health. Just what the guiding factors are it is difficult to say, since the same men act quite differently under apparently quite similar circumstances. Above all, it is necessary to have a strong, healthy heart and strong, absolutely healthy lungs, and the medical examinations should not pass over apparently small matters. I recollect one case where an altitude steersman of a naval airship evidenced some difficulty at an altitude of 3,000 meters. The captain had him examined, and the physician found a slight heart trouble, but allowed the man's passion and enthusiasm for his work to influence him into giving a mild diagnosis. The next day a flight of 6,000 meters had to be made, and this had to be broken off prematurely on account of the man's condition, which grew continually worse in spite of the oxygen used. The man died before a lower altitude could be reached. As a general thing, the first effects of the influence of altitude begin to manifest themselves at 3,500 meters, which also corresponds with the scientific deductions in connection with the "mountain sickness." It is possible to combat the effects of altitude through sheer energy for a considerable length of time, provided that there are no heavy duties to be performed. I remember the first flight of an airship to 6,300 meters, which took place in Nordholz as a trial ascent, and spent four hours in this altitude. Capt. Strasser, Commander Dietrich, and myself stood this altitude without difficulty and without having to employ oxygen, but all experiences speak against such an experiment.

Begin the use of oxygen at 3,500–4,000 meters at least: first slowly, with long pauses between; at 5,000 meters use more, and from there on care must be taken that the crew has oxygen continually. A man, however, who does not possess the necessary energy at this altitude to allow pauses between the introduction of oxygen is unquestionably unfitted for altitude service. A proper

apparatus for taking oxygen must be comfortably within reach of every person in the car. In the corridor an apparatus should be hung every 30 to 40 meters. Any person who is obliged to go up on the gun platform (Steigschacht) should attach an apparatus before going out. Only those persons should be allowed to climb out in this way who are absolutely altitude-proof. The captain must know his crew thoroughly and absolutely in this regard. Between 3,000 and 4,000 meters a short introduction of oxygen every five minutes is quite necessary. Also over 6,000 meters a short draft should be given every minute. Oxygen must be taken on board whenever the flight lasts at least three hours over an altitude of 3,500 meters.

How Keep Mechanics Warm in an Open-Faced Power Car?

In a flight with German rigid ships there is very little difficulty in keeping the occupants warm, since the car is quite closed in and the radiator is so arranged in the front wall that the warmed air keeps the crew always in working condition. Up to this time when the speed of the ships was not too high there was not much done to keep the occupants warm in the open cars. They were equipped with padded leather suits and care was taken to see that they all had fur caps and goggles. Fur-lined gloves were also obligatory so long as the work rendered them practicable. Through giving a proper form to the vanes for inflowing air (Lufteintrittsflächen) whereby a low wind shield (Windschirm) constructed slanting backwards was attached to the front edge of the car, the car was much better protected against the wind. Small, thick matting rugs are on the floor of the car. The fireproof woolen covers which are on board also do good service. Low felt boots are also worn, and in general the chief engineer should see that the occupants of the cars clothe themselves warmly and practically. In the case of severe cold, relief should be accorded after shorter period; in such cases no one should be required to work more than two hours uninterruptedly. The Navy has also made tests with special clothing, electrically heated, but the verdict was very contradictory, it being considered good in an airplane, but a hindrance in an airship where freedom of movement is essential. In the case of an unusually penetrating cold, this clothing should really be seriously taken into consideration. By an average degree of cold the above-described measures will, according to my experience, be quite sufficient for normal, healthy men.

Was any Trouble Experienced with the Metal of the Ship Becoming Powder? If so, How Prevent?

In damp districts, such as inland lakes, in the proximity of marshy ground, and especially on the seacoast where the air contains a great deal of salt, the oxidation of the ship's metal takes place fairly

rapidly and in a greater or less degree, which has a very deteriorating effect on the durability of the ship. Those portions which are underneath and touch the outer envelope are especially attacked, and also the girders upon which the outer envelope directly rests, and above all those parts which form the outer keel in the older ships. The portions of the ship which are on the inside offer a much greater resistance to the dampness. A direct contact with salt water is especially dangerous, to emphasize this point again. If a contact with salt is not to be prevented, those parts of the metal must be aired, rinsed with fresh water and dried, if it is in any way possible. Even the effects of a short contact is detrimental. In the *Swaben* and *Hansa*, where the corridor was made as open as it was possible, the oxidized portions were brushed with a wire brush and then coated with a thin application of veneer, so that every part so needing it received a treatment of this kind every three or four months. And in this way I can guarantee that the metal can be admirably preserved. I consider this question sufficiently important that care should be taken in the choice of a harbor for ships. Very damp districts, especially in too close proximity to the ocean, should be avoided; especially all the western coasts of the ocean should be avoided on this account. (NOTE.—This on account of prevailing sea breeze.) I have just learned that the Junkersflugzeugwerke, in Dessau, cover all the metal parts of the ship, before they are built in, with a thin coating which has practically no weight and protects the metal most unusually well from these influences. I will endeavor to obtain the necessary information in regard to this medium.

How Stow Spare Gas Bags Properly?

When the space at disposal permits it, all the gas bags should be distributed in as large a space as possible; that is, with as few folds as possible, always clear of the ground, preferably on long gratings arranged on scaffoldings one over the other, which are accessible, if possible, from all sides and in such a way that the markings on the bags are distinctly visible from one side. The sheer wires (when possible) are to be taken out and stowed where they can be seen. All automatics naturally out. At certain periods of time, in cloudy and not too dry weather, the bags are to be taken out and aired (about every 4 to 8 weeks) and, if possible, they should not be stowed away again in the same folds. All the existing metal parts are to be separated from the bag itself by wrapping. All the varnished bags or parts of bags are to be well powdered with talcum before being stowed away. All bags which are stowed away must be protected from the cold, and they should also be in a room which can be heated, but which only needs to be heated in severe winter. A partially

frozen bag should be placed in a warm room about 12 hours before before being taken out. All the rooms in which bags are stowed should not be too dry, and should be ventilated. Therefore, rooms on the north side of buildings should be chosen, as they do not receive the direct rays of the sun. Gold-beater's skin, in fact *every* bag made out of skin, should be subject to relatively equal moisture from about 70 to 80 per cent. The dampness is secured through sprinkling and the installation of flat pans holding free water. Every room must have a thermometer and a hygrometer.

For the latest kind of bags, cellar rooms with an even temperature and moisture have proven especially satisfactory. Care, however, should be taken that they are sufficiently ventilated. While the bags are stowed away they can be protected from dust and other dirt by an awning cover. The skin bags are to be carefully protected against mice by means of traps and poison.

How Are Ships Secured in the Shed?

After the ship has entered the shed, if it is to remain there some time, it is brought into the correct position under the suspension hooks and sufficient ballast removed so that it rests lightly on the buffers. Usually it is hung on only three points over the forward and three points over the after car, and suspended equally until the car cradles can be set underneath. It is then fastened as perpendicularly as possible with wire ropes and pulleys on one mooring point in front, in a place in the middle and behind the rear car. The handling lines are tightened and secured. A wire rope is stretched diagonally from the mooring point forward, and another equally as taut diagonally from the middle point aft, behind the after car. The perpendicular spannings may be released enough to permit the movement of the ship. When the ship lies in the shed for some time it is fastened to the beams at every frame.

The ship is brought into electrical connection with the metal in the shed by means of a metal cable screwed on the front and after car, in order to remove the effects of induction on the body of the ship. When gassing and ballasting up, the ship is to be so lightened that a man will be able to lift up the cars unaided. Sand sacks and iron weights are hung on the ship on iron rods with hooks. These rods shall be so long that the ballast can be hung about chest height. The ship's watch has to see that the ship remains in the right condition, either through the taking off or the taking on of ballast.

By securing the ship as above described, it will be able to withstand a strong decrease in temperature in case of necessity—nevertheless great care must be taken to see that the ship's guard does not allow too great claims to be made on it in this connection. By taking some care, I do not consider it necessary to attach a spring balance in

the pulleys on which the car is hung, if care is taken that the single pulleys are, in a measure, equally in the tensile strain, which is difficult to establish by the feeling.

The English method has always seemed to me to be worthy of notice; in their system the free end of the pulley is taken over to the side of the shed and an equal weight is attached to each pulley at a man's height.

To What Pressure are Automatics Set?

The automatics in the main body are so set that at the beginning of the exhaust a pressure of 5 to 6 millimeters water exists on the bottom of the bag, and this requires the automatics to be set 1 millimeter higher for every meter that is added to it. In the arrangement of the modern large ships, the automatics are set at a pressure of 8 to 9 millimeters in the main body of the ship; toward the end of the ship the automatics come up to a pressure of 16 millimeters water in the two end bags, while at the same time the diameter of the automatic becomes smaller. The large bags in the middle have automatics with a diameter of 800 millimeters; the five last and the three front bags have diameters of 545 millimeters. (Since the contents of the bags are approximately the same in the middle, the pressure is set at 8 to 9 millimeters, which increases up to 16 millimeters in the end bags.) The reason for this increase toward the ends must be laid to the fact that in a sharp ascent relatively large quantities of gas must pass through the valves of the bags so that the pressure in a sharp ascent increases more (up to 25 millimeters per valve) than in the small bags. I know of commanders who, out of precaution, reduce this original adjustment in flying, but I also know from my own experience that even higher pressures can be borne by the bags and frame without any danger. The above system has been thoroughly tested and has withstood ascents from 10 meters and more per second. I recommend sealing the adjustment of the automatics, and a testing every 4 to 8 weeks.

7. Are all automatics in one ship set to same pressure?

This question is answered in No. 6.

8. Are present automatics considered satisfactory?

According to my opinion the automatics of the Zeppelins in their present form can not be easily surpassed since they operate continuously without the slightest hitch and always with the same security and, moreover, are models in the simplicity of their arrangement.

9. Are jam pot covers used?

10. What is thought about putting automatics in top of bag, thus doing away with trunks, cages, and the troubles resulting from them?

After the automatics in the bottom of the ship had been a continuous question for years, and no one instance of their failure to operate

had been noticed, I personally made the first attempt in the *Hansa* to place the automatics on the side of the ship in about the middle, and experienced no bad results from having placed the automatics out of reach of examination during the flight. Only later, when the tests were given up, because in spite of everything one was not willing to do away with the possibility of supervising the automatics, should it be necessary, did a trouble evidence itself in altitude flying which made it appear very important in all cases to have the automatics always within sight. The moisture in the gases during the ascent exceeded the saturation point, descended in fine drops of water, and settled in drops on the valve plates and seats. If the drops freeze in the ascent with open automatics the places will not close entirely and the result is that the bags slowly fill with air. There is always the possibility, even if it is scarcely probable, that an automatic may get out of order, and if they are inacessible this may lead to accidents. For these reasons, people in this country are generally of the opinion that it is much better to stick by the inconveniences of the present system.

16. Were reserve propellers ever carried in flight?

Spare propellers are often taken along in flight for the purpose of transport, but never for the purpose of making a change should such be necessary—if I understand the question correctly. Nevertheless, I should say that in the future the carrying of spare propellers on ships whose carrying capacities permit it, during long flights where landings will be made en route, would be very advisable.

For naval scouting work, was any attempt made to fly at best altitude for observation, and were engines and props designed for best performance at some one altitude; and if so, what was this altitude?

Already, before the war, tests were made with the *Hansa* on the Baltic in order to establish the best altitude for mine searching. The results established fairly unanimously that 700 meters was too high to find mines in a depth of more than 4 meters. In scouting for ships on the surface, a greater altitude is better, dependent on the weather. Damp, misty air, even if it is only mist clouds, restricts the range of vision to a very great extent, and high flights do not improve the matter any. There are no prescribed altitudes for scouting, in so far as I know. When the weather is clear, 2,000 meters is a good altitude for scouting purposes. The modern so-called Mayback motor and the attendant propeller are constructed for the very best work in 2,000 meters (Mayback high-altitude motor).

18. Are power pumps to be used for transferring gasoline in keel; what type of pump is used; what is the general scheme of the system?

If, as I understand it, a "power pump" is a pump run by engine power, then I must state that there are no such appliances at the present time. Gasoline is transferred in the keel by means of a special arrangement of attached hand pumps. I will try to procure the plan of such an arrangement.

19. Was it found necessary to have lubricating oils of different viscosities when flying at high altitudes from those in normal use, and were two kinds carried in flight?

No. Only one kind of lubricating oil is carried—both in high altitude and low flying.

20. What sort of antifreezing mixture was used for radiators and ballasts?

Only alcohol was used for the radiator. Glycerin is the best for the ballast. For economic reasons, a substitute material was subsequently used in place of glycerin; this came in general use, and was a combination of "Frostaquol" and "Perglycerin" in the proportion of 1 to 5. All substitutes have the great disadvantage of affecting the rubber sacks too much and of having a deteriorating effect on the metal of the ship where they come in contact with such, and this can not always be prevented. Up to the present, no really satisfactory substitute has been found for glycerin.

21. Can you get any data on resistance, propulsive efficiency, and relative merits of a ship equipped with a few cars with high-powered engines, and one with a large number of cars with smaller-powered engines?

The largest possible distribution of engine power increases the safety of operation, since the failure of one motor means the failure of only a portion of the engine power; but the number of the crew is thereby increased and the specific head resistance of the ship is increased through the presence of many cars. The latter disadvantage can be lessened through the arrangement of several engines, one behind the other, on one propeller in the car; nevertheless, the smaller efficiency of the one engine on a large propeller when the second gives out must be reckoned with.

According to my opinion and experience, too great a division of the engine power is quite wrong, since the complication of the entire machinery speaks against it. According to my personal opinion, it is absolute folly to use more than six motors, if the engine is of a good type and constructed so as to be reliable in its operation. Five to six motors give an extraordinarily high grade of efficiency. A ship of 1,000 horsepower should not select two engines at 500 horsepower, but four at 250, or five at 200. A ship of 3,000 horsepower should not choose twelve engines at 250 horsepower, but six at 500 horsepower.

The more detailed data requested in the question can not be given inasmuch as the ships which had more than four cars never made test flights which could furnish the desired information, and, besides, there were no ships with equal engine power and a smaller number of cars. Further information will be given later.

22. On long flights, what was the best combinations of engines for economical steaming; i. e., all engines running slowly, or a few run at high speed?

On the flight of the *L–59* to Spika, one motor was always stopped for two hours, and the commander felt that in this way he could cover a greater distance more economically. Three engines out of five running at full speed give a speed of about 82 to 85 per cent, and a 60 per cent use of benzine. All five engines running at half speed (1,000 revolutions against 1,400 at full speed) give a speed of about 75 per cent and an approximate 60 to 65 per cent use of benzine, so that the first arrangement is the better. Two side engines alone in the arrangement of the 55,000 types (after car two engines on one propeller) give a speed of 70 per cent and a 40 per cent use of benzine. It is also better to stop some engines and let the others run at full speed. Under certain circumstances—for example, in the case of severe cold—it is better to let all the engines run slowly in order to prevent the freezing of the radiator. In general, as is well known, the strength of the wind and its direction also enters very largely into the question as to how one can fly the more economically—with full power, or with engines running slowly. But here the following two things must always be considered: Whether it is a question of a stern wind where the ship can fly without the use of benzine, or whether there is a head wind where the strength is equivalent to that of the ship and the use of benzine is, theoretically, endless.

AIRSHIP SITUATION IN GREAT BRITAIN.

Source: Reliable.

(14549.)

20 May, 1921.

In March, 1921, when it was announced in Parliament that the Admiralty were no longer particularly interested in lighter-than-air craft, it appeared that the lighter-than-air situation in Great Britain would be in a poor position for some time with regard to its future. Investigation indicates that what the Admiralty really stated was not in entire accord with what was published in the press, and it is now understood that the situation is about as follows:

(*a*) The Admiralty was advised by the Air Ministry and the Treasury that there would probably be insufficient Government funds available to carry on the program desired for both lighter-than-air

craft and heavier-than-air craft. With the limited amount of funds available, the Admiralty decided that it would prefer to carry out the heavier-than-air program without material sacrifice rather than attempt to carry out both the lighter-than-air program with material sacrifices in both. This resulted in the general public understanding that the Admiralty was not particularly interested in airships. As a matter of fact, it meant that the Admiralty was more interested in heavier-than-air craft than in lighter-than-air craft and, as funds would not be available for both, the Admiralty decided to carry on with the heavier-than-air program, the lighter-than-air program being temporarily dropped.

(*b*) It is understood that the foregoing decision was made after various discussions with the Air Ministry, the Treasury officials, and the Council of Defense which was then in session.

The success of the mooring-mast experiments at Fulham have put an entirely different face on the question of airships. This is true both as regards military airships and civil airships. Considerable new interest in the subject has been aroused, and the Air Ministry, which previously had intimated that the further development of airships would be held in abeyance, have now announced that this decision is being reconsidered. It is expected that this reconsideration will be carried along for a period of two or three months, and possibly longer, in order to determine what the general attitude of the public is and what the specific attitude of private concerns may be with regard to the operation of airships from the commercial point of view.

The commercial proposition has been under discussion for a long period of time, and even at the present time no definite information is available as to what steps may be taken in connection with civil aviation and airship services. That negotiations are still proceeding is definitely known, and the establishment of commercial air routes between England and the Continent and between England and Egypt is still under way. It was announced on May 19 that a mooring mast would be constructed at Croydon, and it is understood that this mooring mast will be 120 feet in height, of lattice wood structure, the estimated cost of which is only about £2,000. This is purely an experimental proposal, and no definite information is available relative to the exact purpose of this wooden mast, but it is understood to have some connection with the commercial airship routes under consideration. The decision to make the mast of wood and only 120 feet high is based purely on the question of cost, there being a very small amount of funds available.

On May 18 representatives of the Admiralty and a parliamentary secretary, accompanied by representatives of the Air Ministry, made a trip to Fulham to inspect the mooring mast and to make a flight

in *R–33*. It is believed that this action was taken owing to the increased interest that is being aroused since the success of the mooring mast has become apparent. It was also undoubtedly taken to show Parliament and the Admiralty the tremendous advantages of the mooring mast as well as to indoctrinate them with the comforts and advantages of travel by airship.

R–36, which has just been completed as a passenger ship, will probably make experimental and demonstrating flights to the Continent and to Egypt. It appears probable that *R–37*, still unfinished at Bedford, will be completed, although no definite orders to this effect have as yet been issued. *R–37* has had practically no work done on her for the past year, but if the airship situation develops satisfactorily the Air Ministry will undoubtedly authorize her immediate completion. It may be, if the commercial airship idea develops satisfactorily, that *R–37* will be completed as a commercial airship rather than as a military airship. However, nothing definite along this line has as yet been determined.

It will be noted from the foregoing that the airship situation in Great Britain to-day is still in a state of flux, but, while two months ago prospects were very gloomy, at the present time prospects are showing signs of material improvement. It appears likely that the Air Ministry (Civil Aviation) will have to utilize some of its funds to demonstrate the practicability of commercial airships, and if these demonstrations are in any way successful the airship game in Great Britain will receive considerable impetus.

In connection with this matter there have recently been in England and in Europe four Americans who are investigating the commercial airship proposition. These Americans are Mr. Samuel Bertran, a New York banker; Mr. Crowell, formerly Assistant Secretary of War; Mr. Schildauer, electrical engineer; and Mr. Jacoby. It is understood that Mr. Bertran represents the financial side, while the other three gentlemen are investigating the technical side. A representative from this office took Mr. Bertran to see Lord Londonderry, Under Secretary for Air, and also put him in touch with Commodore Maitland and other Air Ministry officials familiar with the airship game.

DETAILS OF GERMAN COMMUNICATION SYSTEM DURING WAR.

Source: German Admiralty.

(1177.)

2 June, 1921.

During the early part of the war the German commander in chief of the High Seas Fleet, as well as the commander of the Baltic forces were seriously handicapped by faulty communications. The fault lay chiefly with the system then in effect, viz, a cumbersome code

which resulted frequently in messages being misunderstood and often delayed in coding and decoding. In addition to this, the English stations using directional radio were able to locate the German vessels accurately owing to their location, while, on the other hand, German stations were not ideally located for cutting in the position of English vessels. A glance at the chart will show the reasons for this. As a result, the German men-of-war were instructed to restrict more and more their use of radio for communications, with the result that the commander in chief often lost complete control of his forces, and on numerous occasions failed to receive information from scouts and other vessels which were vital to his disposition of forces, and led to erroneous estimates. The two volumes of the German Admiralty publication Der Krieg zur See (The War at Sea) are filled with such examples. The English raid on Heligoland Bight on 28 August, 1914, illustrates clearly the vital importance of rapid, concise, and reliable communications. Failure of the communication system in this case cost the German Navy over half of the much-needed light cruisers.

As a result of these experiences, the Germans at Jutland relied on their small hand sets operating on very short wave length for intership and intersquadron communication. This system was double banked by visual signals. The high-powered sets were used entirely for interference and actually succeeded in jamming the English radio communications during the battle. Admiral Jellicoe failed to receive the reports of some contacts and the reports from the shore stations giving location of the German main fleet.

This system, however, had the disadvantage of forcing the Germans to abandon the high-powered radio sets as a means of communication and restricted their communication to some extent. The same is true of the German submarines.

The Army was quick to use the Siemens-Halske automatic printing and sending for all messages from G. H. Q. to the front and throughout Germany. This system was only perfected for radio later, and therefore did not come into use for the German Navy except in the case of radio-controlled boats (reported on N. O. Berlin report No. 75, 26 May, 1921).

It is urgently recommended that this system be seriously considered for communication in the United States Navy.

The system has the following advantages:

Absolute reliability of transmission.

Extraordinary rapidity of transmission.

Can not be jammed (if heterodyning is used).

Wave length difficult for enemy to determine.

Practical secrecy of transmission, since the receiving apparatus must be automatic and synchronize with sending stations, thus permitting the use of various synchronizing speeds.

BATTLESHIP DESIGNS FOR BRITISH NAVY.

Source: Reliable.

(14454.)

7 June, 1921.

The following information regarding the new construction of English battleships was obtained from a German naval officer, who claims that the information is from an absolutely reliable source, and that there is no possibility of error in this case. The naval observer has great confidence in the integrity of the officer in question.

The new *Atlantic* type of battleship designs have been completed in England, and the keel is about to be laid for two vessels.

Displacement, 60,000 tons.

Armament, eight 18-inch guns.

Very heavy side armor.

Special underwater hull construction for protection against mines and torpedoes. Vessel supposed to remain afloat even though several torpedo hits are received.

Very large cruising radius.

It is presumed that this is the program of four ships to be laid down this year.

Further information has been promised on this subject in the near future.

MADLER MOTOR.

Source: German Admiralty.

(14625.)

3 June, 1921.

The Madler motor was invented by Franz Madler, and backed by a syndicate composed of Madler, Weser Werft, Bankaus, and Weyhausen, of which Dr. Alfred Lohamn was the president. In 1917 this syndicate authorized the Gorlitzer Machine Co., of Gorlitz, to construct the first experimental model, in accordance with Mr. Madler's patents, for test by the German Admiralty. After these tests, due to difficulties with Mr. Madler personally, no further work was done by the Gorlitz company; the Admiralty could come to no agreement with Mr. Madler, and in 1918 the syndicate was dissolved. It is believed that Mr. Madler has done nothing further in developing his motor. The patent rights probably belong to him, and the experimental single-cylinder engine built for test at Gorlitz was kept by him. His present whereabouts are unknown, although believed to be in Germany. Further information will be forwarded later.

The following information has been furnished by the Weser Werft, Bremen:

Madler explosion motor as differentiated from the equal-pressure Diesel motor.—Engineer Madler has developed and tested the following con-

structions, as a result of his experience with automobile and power-boat motors. The construction is applicable to all types of explosion motors, using as fuel the following: Benzine, benzol, alcohol, petroleum, and gasoline mixtures; and is particularly valuable for the automobile and airplane engines.

The principal construction details are as follows:

1. Absolute control of the heat transfer with each revolution, and reliable functioning of the piston cooling by means of compressed air.

2. Reliable conduction from the cylinder and cylinder walls by means of special channels for the cooling water which does not permit the formation of steam, and further permits no temperature difference between the cylinder walls and the valves.

3. The cooling of the exhaust valve by means of water.

4. Cooling of the spark plugs with compressed air.

5. Driving and starting thermometer by means of a mechanical arrangement which brings into the cylinder a definite amount of fuel at each stroke.

6. A fuel-oil pump for benzine and benzol operation is capable of operation.

7. Arrangements for operating the engine on fuel oil which is not easily gasified.

8. Valve-operating mechanism removed from the cylinders. The purpose of the points mentioned from 1 to 4 is the increase in the power of the motor. These constructions are directly applicable to automobile motors, airplane motors, etc. With special regard to airplane motors, they have the possibility of permitting the construction of large motors of light weight.

For the operation of these motors, and particularly airplane motors, the points mentioned from 5 to 7 give particular reliability to the engine. For airplane motors, it has long been a problem of starting the motor without special application of taut to the propeller.

The operation of airplane motor and safety of flight depends largely on the construction of carburetor, and is therefore immeasurably increased when the carburetor is omitted.

In particular those points mentioned under 5 and 6 permit the possibility of using heavy fuel oil with almost every type of motor.

The description of the construction (3 copies in English) is forwarded herewith as inclosure "A." The sketches referred to in this inclosure were not obtainable.

The following information was furnished by the German Admiralty:

Test of the Madler motor.—On 7 December, 1917, the Gorlitzer Mashin Co. tested the single cylinder experimental engine of the

Madler syndicate, after the objections raised by the Navy on the first test had been taken care of.

This second test lasted for eight hours, during which time no troubles were experienced with the motor proper. The test was interrupted twice, once due to the failure of the driving pin breaking on the fuel-oil pump which was used to supply the motor, and once because the vibration caused the fuel-oil lead to be broken at one place and to leak. These two faults were not due to the motor proper.

The examination of the engine after the test showed that all parts had functioned properly: that the cylinders and pistons surfaces, as well as the valves, were all in excellent condition.

It should be noted that the engine required a considerable amount of lubricating oil, which condition must be remedied. The Madler syndicate will therefore undertake to improve the piston packing rings in order to reduce the lubricating oil consumption. As a result of the test, and the first and second trials, the Madler syndicate gave as the energy of requirements for the injection air as three-tenths of 1 per cent and the piston cooling air as 1.7 per cent of the total power developed. These values are very favorable, and it may be stated as a result of these tests that with a little further work a very light, practicable, and high-powered engine is easily to be expected.

The German Admiralty looked with great favor on the experimental model as tested at Gorlitz in 1917, but could come to no agreement with Mr. Madler on account of his personal characteristics.

Report on the test of the single cylinder 100-horsepower Madler motor on 7 December, 1917.—The motor was tested by means of a flange brake (air) of an outside diameter of 1,972 millimeters and a thickness of 82 millimeters.

After corrections for the brake, the report for the 12th of December, 1917, indicates that the mean load was 112 horsepower.

That with the earlier tests the maximum tests of the motor was equal to 130 horsepower at 1,280 revolutions per minute. The engine used a rich mixture on this test. With the previous results the measured amount of air for piston coolage amounted to about 1.7 per cent; the use of fuel injection air amounted to about 0.03 per cent.

Complete test data (3 copies in English) are forwarded herewith as inclosure "B."

The copies in German of the original papers are forwarded herewith as inclosure "C."

COMMENTS ON FACTS CONTAINED IN LIEUT. COMMANDER WARREN'S ARTICLE, "THE BATTLESHIP STILL SUPREME," PUBLISHED IN THE "WORLD'S WORK" OF APRIL, 1921.

Source: A High Ranking German Naval Officer.

(14414-A.)

3 May, 1921.

The article of Lieut. Commander Lee P. Warren, entitled "The Battleship Still Supreme," published in the World's Work of April, 1921, contains several statements which are not entirely in accord with German experience, and which overlook some of the developments which have been made in Germany. These developments are all available to the United States Navy, and, to some extent, to other navies.

On page 557, paragraph (2), Lieut. Commander Warren states: "The submarine, however, like the surface torpedo vessel, has become an important element of the fleet, but its value against major ships in the World War did not fulfill the predictions of the submarine enthusiasts, and the development of listening devices, depth charges, and antisubmarine tactics has probably reduced the future effectiveness of the submarine in a naval campaign."

From the most reliable German sources the following information on this point has been obtained: The depth charge was most effective against submarines in *shallow* water, such as the British Channel, but even under the best circumstances few submarines were lost through this method of attack. One German submarine received a barrage of 35 depth charges dropped by Commander Farquhar off Fastnet. This submarine returned to its base without damage, except a few slight leaks. (Complete report will be submitted on this case in the near future.)

The trackless torpedo (electric) was not developed by the Germans until the end of the war and was not used at the front as the development was too late. A very large number of ships attacked were able to escape by observing the wake of the torpedo. Such devices will greatly increase the effectiveness of the submarine.

Listening devices have been developed in Germany which are as sensitive and accurate as our own; the theory of sound under water has been developed to a very much greater extent. The Germans can not yet solve the problem of picking up a submarine with listening devices when a vessel is underway at a speed exceeding 10 knots, and, further, the range is very limited under these circumstances. It is practically impossible to detect a submarine when vessels are being convoyed.

Therefore the present effectiveness of the submarine against capital ships can not be judged by the results of the late war, without considerable allowance for improvements in torpedoes, the depth of

water in the vicinity of operations, and the development of submarine tactics. The Germans did not attempt submarine operations against capital ships toward the end of the war for strategic reasons (orders to attack merchant vessels only), and due to lack of sufficiently great underwater speed to permit them to assume proper tactical position for attack. (This occurred at the Dogger Bank engagement; no submarines accompanied the German fleet at Jutland.) Admiral von Scheer stated (see report No. 34, 1921) that the submarine should have great cruising radius and high speed, which improvements, together with long-range trackless torpedoes and operations in deep water, may very greatly increase the effectiveness of the submarines. Germany did not build submarines with high submerged speed since the submarine attack was entirely directed against merchantmen and not against battleships.

In addition to this the vessels which have been hit by shells in the structure above the water line may be completely put out of action by torpedo hits, as in the case of the *Lutzow* and *Seydlitz*.

Best German opinion is inclined to the view that the effectiveness of the submarine may be greatly increased as an offensive weapon, but that it naturally can never *replace* the battleship, since the battleships must *always* protect the submarine bases.

Commander Warren states, on page 557: "The Germans bear a record of sinking only two merchantmen by this means" (torpedo planes). True, the plane must fly very low (within 6 to 10 meters of the water) to launch the torpedo. This disadvantage may be partly overcome by the construction of large fast planes, such as have been built in Germany (see report No. 33, 1921). These large, fast planes are not "fair-weather" planes, and can fly in weather too severe to permit battleships to use antiaircraft batteries with accuracy.

Further, on page 557: "As it has thus far been impracticable to propel a bomb dropped from aircraft, its velocity is dependent on gravity, and therefore, can not be greater than about 700 ft./sec."

The bombs manufactured by Goerz-Berlin attained, on test, velocities of 300 meters per second, or nearly 1,000 feet per second (see report No. 19, 1920). It has been stated by Capt. Boykow that his naval bombs developed at Pola were not stabilized by fins and attained velocities of 400 meters per second and greater. This latter statement can not be proven at this moment. Capt. Boykow has calculated penetration curves, showing effective penetration of steel plates at these velocities (sent by mail to Commander W. R. Furlong). It would appear, therefore, that a 3-inch protective deck might not be sufficient protection in future warfare, particularly if bombs are equipped with the type of delayed action fuse developed by Krupps.

On page 559: "The excellence of the bombers is no better than the gunners." In this connection attention is invited to report No. 12,

1920, on "Bomb Sights as Developed in Austria by Capt. Boykow." the bomb sight can be greatly improved over the present, and the chances of hitting may be very greatly increased. While no reliable naval authority in Germany to-day advocates the abolishment of the battleship, it is claimed that the big ship must be better protected against aerial and submarine attack.

The following data have been obtained from Krupp:

To penetrate 3-inch nickel steel (not hardened), the following velocities are given, together with height necessary to attain velocity:

Caliber.	Weight.	Velocity.	Height.
Cm.	*Kg.*	*Meters.*	*Meters.*
40	600	168	.....
35	600	154	1,200
33	500	161	1,300
30.5	400	170	1,500
28	300	184	1,700
24	200	200	2,000
21	100	257	3,350
15	50	282	4,050
17.5	50	322	.....

COMMENTS BY SIR ROBERT HADFIELD ON ARTICLES APPEARING IN THE "NAVAL INSTITUTE" FOR JUNE, 1921.

Source: German Admiralty and German Shipbuilding Concerns.

(14697.)

30 June, 1921.

QUOTATIONS AND COMMENTS FROM SIR ROBERT HADFIELD S ARTICLE.

The article is full of statements which are not at all in accordance with the facts as derived from correct and reliable information held by the German Admiralty and by the builders of the material involved in Germany. The following specific comments are made on certain statements as noted below. The information submitted in remittal is all from reliable sources.

So far as we are concerned the principal interest is centered in the material side, and Sheffield has every right to be proud of the great part it has taken in producing machinery, guns, armor, and projectiles required for the fleet which have proved to be entirely adequate for their respective duties within the scope of their design. The calamity, almost incredible in its swiftness and completeness, which overtook three of our armored cruisers appears to have led to a belief in the superexcellence of the German armor-piercing shell, and the public has attributed the sinking of these three ships to the inferiority of their armor.

Comment.—From German sources it is learned that the wire-wound guns were a source of continual trouble to the British. Immediately before the war they tried to change to the built-up construction, but, owing to the tremendous expense involved and to lack of experience,

were forced to abandon this project. After the war the British made every effort to obtain the shrinkage calculations from the firm of Krupps, who persistently refused this information, and further stated that it would be impossible for the British to build the Krupp gun, even with the experience needed and the shrinkage calculations, as they did not have the quality of steel essential for this construction.

Comparative tests between German and British armor made in 1913 by Krupp showed a superior resistance of 10 per cent in Krupp heavy armor. As regards projectiles, the German confidential report shows that 80 per cent of the British shells splintered on impact with the German heavy armor, and in cases where the shell penetrated the heavy armor it did not explode. The greatest damage against German vessels was done by the penetration of light armor belts near the bow and stern above the water line. When these vessels were subsequently torpedoed these holes in the bow and stern caused them to ship a great deal of water in the compartments penetrated. This caused the loss of the *Lutzow*, whose case in detail is discussed further along in this report.

It is, however, a fact that British armor withstood the attacks which it was designed to defeat and kept out the German projectiles wherever its thickness warranted this expectation.

Comment.—This statement seems to be rather misleading in view of the fact that the five German battle cruisers bore the brunt of the whole fight from the time contact was made with Admiral Beatty's forces until the fleets lost each other that night. The English battle cruiser flotilla lost three vessels in that time by gun fire.

The 11 and 12 inch armor belt of the German battle cruisers was perforated repeatedly, and it was due to their armored decks and to their very adequate subdivision into water-tight compartments more than to their heavy armor belt that four of them managed to struggle back to port, there to remain for some five or six months.

Comment.—The secret photographs in the German Admiralty showing hits made on German vessels at Jutland show perforations to be entirely in the thin armor and not in the 11 and 12 inch armor belt. There is also a misstatement in this paragraph about the time these vessels were under repair. The *Seydlitz* was under repair for three months, while the other battle cruisers were quickly in condition. The statement about four of them struggling back to port is also misleading, as it implies damage to the main propelling machinery, and in no case at Jutland did German vessels sustain hits in the main boilers or engine rooms.

The impression created by the statements in Lord Jellicoe's book was as fortunate as it was unintentional. A close examination of the actual phrases used disclose the fact that there was no imputation against the metallurgical properties and treatment of the shell body as an armor piercer; and, indeed, where the shell functioned properly as a whole, *the turret, side, and deck armor* of the German ships was repeatedly perforated; and this not with salvos, but by shell falling singly.

The statement that turret, side, and deck armor was repeatedly perforated by shell falling singly is an extraordinary statement because both the fleets fired salvos and, except at extremely short ranges, the whole salvo would certainly not find a target.

Photographs published in the Engineer February, 1920, show the excellent results obtained.

Comment.—It is not known where the photos published in the Engineer of February, 1920, were obtained, since the German photographs are held secret by the Admiralty and show a state of affairs exactly opposite to that described by this article.

The *Derflinger*, hit by seven heavy shell of 13.5 and 15 inch caliber, probably all armor-piercing projectiles, remained in the line, but with her two after turrets wrecked, a third partially disabled, and only one turret left in effective operation.

Comment.—The *Derflinger* was actually hit by 28 shells, of which 9 were small caliber.

It would be unfair to attribute the sinking of three British battle cruisers to the armor-piercing qualities alone of the German projectiles. It should, too, be borne in mind that the armor of these particular ships was comparatively thin. That the turret armor of these three ships was perforated there is no doubt, but this result seems to have been attained by the combined weight of several shells striking more or less together, and not to the armor-piercing effect of a single shell.

Comment.—The German Admiralty attributes the sinking of the three British battle cruisers to the delayed-action fuse of Krupps, which the British before and after the war made and still are making repeated attempts to obtain.

Having had the exceptional opportunity of examining in a most exhaustive manner modern German (Krupp) armor-piercing shell and also been in possession of comparative results of plate tests of contemporary German and British armor piercers, it can be confidently asserted that at the time of the Battle of Jutland the British ships were armed with a better projectile.

In view of the foregoing paragraphs, the statement of Sir Robert Hadfield that the British ships were armed with a better projectile than the German also seems to be rather extraordinary.

None of the British armored ships were sunk as the direct effect of gunfire, while two German ships, the *Lutzow* and the *Seydlitz*, actually suffered this fate. The former ship was finished off with a German torpedo to hasten her end, while the latter was run ashore to prevent her sinking in deep water.

Comment.—This statement is entirely at variance with the facts. The *Lutzow* was sunk by her own crew, as she would have hindered the fleet in getting back to port. She was in no danger of sinking at the time of being torpedoed. The *Lutzow's* forward compartments were flooded and her propellers were therefore out of water, preventing her from keeping contact with the fleet, while the commander in chief did not deem it expedient to detach another ship to tow the *Lutzow*. The principal reason therefore for the sinking of the *Lutzow* was to prevent her falling into the hands of the Eng-

lish. The *Seydlitz* was not run ashore to prevent her sinking in deep water, but was brought into port with the fleet.

The German Admiralty regards these articles as pure propaganda directed against German material, as the English officers on the commission at Berlin have received instructions from the Admiralty to obtain information of the above subjects from every possible source, and they have sent representatives of the British firms out who have repeatedly attempted to purchase these secrets from Krupp.

BUNGO STRAIT BETWEEN KYUSHU AND SHIKOKU TO BE FORTIFIED.

Source: Japanese Advertiser, June 16, 1921.

(12368-A.)

23 June, 1921.

Japan is to fortify the south entrance to the Inland Sea by the erection of fortresses at Saganoseki and Sadamisaki, the two peninsulas fronting on Bungo Strait, between Kyushu and Shikoku, according to a dispatch from Oita. The work will start shortly, and upon its completion an artillery regiment will be stationed at Saganoseki. This section will then become one of the most important defensive positions in the Empire.

ELEMENTARY GUN PRACTICE FOR QUALIFICATION OF POINTERS—JAPAN.

Source: Reliable.

(3310-A.)

3 June, 1921.

Elementary gun practice for the training and qualification of pointers is held in the spring. The range abeam is 2,000 meters; speed of firing ship about 12 knots. The target is anchored and practically identical with our own.

All firing is with 1-pounder and 3-pounder subcaliber (this to save money). The allowance per pointer is 12 rounds for 6-inch guns and below and 8 rounds for each turret gun. The turret allowance must be fired in five minutes or less.

The target raft is fitted with strips of light canvas about 2 feet wide; these strips are lashed together, leaving an open space about 2 feet wide between them.

Actual target hits are not recorded; all hits are theoretical ones, assigned by rake observations made by ships anchored near the target. The shells are not painted.

Medals and money prizes are given to qualifying pointers. A pointer who is awarded a medal for three successive years is given a permanent medal.

The ship making the highest score is awarded the trophy flag, which is kept in the captain's cabin.

Long-range battle practice is held in the fall with full charges. It is believed that only actual hits are scored in this practice.

TORPEDO PRACTICE, JAPANESE NAVY.

Source: Reliable.

(14117.)

25 May, 1921.

There are three forms of torpedo practice conducted by the Japanese. The data submitted in above report are of proving practice. At the 7,000 and 8,000 meter ranges in this form of practice the target is stationary and 100 meters long. The torpedo must pass within the target limits to obtain a full hit. On each end of the target and 50 meters from the ends boats are anchored. When torpedoes pass within these outside limits they are given partial hits.

For the 21-inch 10,000-meter torpedoes the target is reported to be approximately 125 meters long (exact length not positively known) and the partial hit limits about 50 meters each. The standard speed for both the above types of torpedoes is 27 knots. A penalty is applied to the score if the torpedo makes less than the standard speed; no penalty is applied for exceeding the standard speed.

There are two other forms of torpedo practice, one in which three destroyers steam in column ahead as target, the center destroyer being the point of aim. If the torpedo passes under the point-of-aim destroyer a full hit is awarded; if it passes through the clear water between the point-of-aim and the end destroyers a partial hit is assigned, depending upon the distance it passes from the point-of-aim destroyer.

In this form of practice hits only are counted, irrespective of speed. The target destroyers steam at from 10 to 15 knots on various courses. Both speed and course of the target are unknown to the firing ship. The range in this practice is approximately 4,000 meters.

In the third form of torpedo practice a battleship is the target. The torpedoes are fired with collapsible heads, and hits are awarded only when the torpedoes actually hit the target, the speed of the torpedo not being taken into account. Three or four destroyers make an approach and fire one torpedo each simultaneously at about 6,000 meters range. The speed of the target ship is approximately 12 knots and the course steady.

The first 21-inch torpedoes were obtained by Japan in the fall of 1915. The *Urakaze* was the first ship to be equipped with and to fire this type of torpedo. They were the standard Whitehead type. Lieut. Commander Morimoto was the torpedo officer. He had been sent to England while the ship was fitting out at Scotstoun. At first he experienced much difficulty with these torpedoes, but eventually, after sinking all of them three or four times, he succeeded in running them properly.

DIFFICULTIES OF WIRE-WOUND GUNS.

Source: Reliable.

(10442.)

6 June, 1921.

From the above sources, which are considered especially reliable in view of our present relations, the following information has been obtained, viz:

Structural difficulties.—The wire-wound gun is difficult to manufacture in that it requires special apparatus for winding the wire. Even with these machines, the stiffness in the direction of the bore is lacking and muzzle drooping occurs to much greater extent than with built-up type.

The English have kept up the construction of wire-wound guns because (1) the firm of Vickers required the Admiralty to pay for the entire equipment for wire winding (which would thus become useless) in the event of going to built-up guns; (2) it is extremely difficult for any concern to cast the large hoops for the built-up guns without the long experience necessary and the high-grade homogeneous steel essential to good castings. In this respect Krupp states 75 per cent of the steel smelted can not be used in the casting for guns. The construction of an 18-inch wire-wound gun would cause almost insurpassable difficulties.

Service reasons.—(1) The muzzle drooping of wire-wound guns is a factor which must be carefully watched.

(2) With great rapidity of fire, the heating of the wire is uneven and may cause a reduction of the bore near the middle, resulting in seizure of the shell, or blowing off the muzzle.

(3) The life of the gun has been given as 135 rounds for the English wire-wound gun of 30.5 centimeters. The Krupp 30.5 gun has a life in service of about 800 rounds average. "Life of gun" in this case means that the shell must be steady in flight, and that the loss of muzzle velocity can not be more than 10 per cent of the original muzzle velocity.

The Krupp directors have stated that the firm of Vickers has offered to purchase the Krupp shrinkage figures, but that this offer

was refused. Krupp stated further that even though the English possessed the shrinkage calculations, they were not in a position to manufacture the built-up guns on account of the high-grade homogeneous steel required.

BRIEF SUMMARY OF MAIN REASONS FOR GERMAN SUBMARINE'S FAILURE IN LATE WAR.

Source: Obtained from Officer Who During 1918 Was Chief of Submarine Section in German Admiralty.

(12122.)

27 May, 1921.

A brief summary of the main reasons for the submarine's failure in the late war, with reasons leading up to Admiral Scheer's recommendation to employ it in warfare against merchantmen, contains German naval officer's opinion relative to proper future development of submarine, effectiveness of depth bombs, and German submarine losses.

The following information was obtained from the officer who, during 1918, was chief of the submarine section in the German Admiralty and who commanded the submarine flotilla at Emden during the first years of the war.

The substance of the information is as follows:

The late war can not be regarded as a criterion for drawing conclusions of the effective use of submarines against battleships. The German Admiralty in the early part of the war did not believe that submarines could be used as a tactical unit of the fleet because the material was not sufficiently developed. Submarines were therefore used entirely for coast defense and independent scouting. As the material and personnel improved, there were in 1915 (late) and 1916 (Jutland) opportunities to make use of the submarine in conjunction with the fleet, which, however, were not seized. The submarine commanders were anxious to operate with the fleet and the following exercises were carried out, viz, destroyers accompanied the submarines which cruised on the surface until sighting enemy fleet. Submarines then to submerge and receive signals from destroyers by means of submarine signaling devices. In this manner the destroyers are enabled to maneuver to bring the submarines into position favorable for attack.

The German Admiralty at that time (1916) was not fully convinced of the possibilities of submarine used in this manner and withheld permission for these tactics. Therefore, at the Jutland battle, the German submarines were sent to the harbor entrances, where they accomplished nothing, since the English men-of-war entered and left the harbors either at night or during the day at high speed with destroyer screens. After the battle of Jutland one submarine from

Emden obtained permission to run out for a chance shot and actually succeeded—getting within good torpedo range of the *Marlborough*, but both torpedoes failed, owing to neglect of commanding officer to overhaul same during its last stay in port.

After this battle Admiral Scheer recommended the use of submarines against merchantmen, as the numerical superiority of the English fleet was such that a decisive German victory appeared to be impossible.

Even then Germany did not build the large-type submarines in any quantity, but, owing to political differences, conducted a half-hearted submarine warfare on merchantmen under numerous restrictions. The boats operating from Zeebrugge were becoming less and less effective owing to mines in the English Channel and the increasing submarine patrol. German submarines in deep water were much more successful, particularly in the Mediterranean. This officer was of the opinion that with the submarine cruisers the entire submarine warfare could have been carried on under the rules.

This officer believes the war has shown the necessity for the large submarines of over 3,000 tons, with high surface speed, large cruising radius, protection against destroyers by mounting 5 to 6 inch guns.

These boats would then be considered a tactical unit of the fleet and could be built sufficiently strong to withstand water pressure at depth of 100 meters, thus reducing effectiveness of depth bombs. This, in conjunction with the trackless torpedo, would make the submarines a dangerous offensive weapon.

This officer believes the depth bomb is only effective in shallow water and when the *exact* location and depth of submarine is known.

During the war the Germans lost 30 submarines by depth charges, most of which were in shallow water. The majority of the submarines were lost in the mine fields.

PRESENT SITUATION OF THE ARGENTINE GOVERNMENT.

Source: A Student of South American Affairs.

(12921.)

23 May, 1921.

There is no doubt but what trouble is threatened, if not actually impending, in this country, which menaces the power, if not the actual existence, of the present Government and of the Radical Party. Facts and rumors are volunteered from entirely too many sources totally disassociated, representing the extremes of American life and all the media, to escape this conclusion.

As to political allegiance, there no longer seems to be any "happy medium." A man either declares himself a rank outsider, and irrevocably opposed to the Radical Party, "and all that therein is,"

or else he sees a storm coming, either general or individual, in all its application, and he gets under cover while there is yet a chance and allows himself to be "spoofed" from the Radical Party patronage pap.

On this point a few illustrations might be pertinent. There is an old-established firm in town, which is absolutely English in everything excepting the nationality of its partners, and as to that it is Argentine of Scotch descent. The members have criticized local political conditions to me very freely for a long time, and have called my attention to caustic editorials against the president, which did not merely criticize him, but caricatured him without mercy.

The other day one of the firm, who has been the hardest of the critics, remarked that while Salaberry was crooked (his honor (?) was "sustained" in the House of Deputies by a vote of 76 to 73, his honor being thereby proved by the size of the majority in his favor) the president, of course, was an honest man. This firm sells goods that the Government needs. The president has lately been distributing patronage among those who have been outside the fold until recently.

The President has finally accepted the resignation of the Argentine minister in London, Federico Alvarez de Toledo, who spent most of his time on leave in Buenos Aires. He was a failure as a Minister of Marine; he is an engineer by education, having had a career which is generally credited as lacking in professional distinction and all personal honor. He is definitely reported to have shared in the bribe which was paid for the sale of the "Bahia Blanca" to the Government. One outstanding *fact* of his career is that Vice Admiral Juan P. Saenz Valiente, who was an honorary member of the Naval Club, by virtue of having been Minister of Marine, in accordance with the unwritten law of the club, has resigned his membership, on the ground that the same honor had been extended to private citizens who had held the same office; which is another way of saying that an honor which was sufficiently promiscuous to include Federico Alvarez de Toledo.

Now when the storm was beginning to show its advance black cloud some months since, Alvarez de Toledo was "unloaded," and José Evaristo Uriburu, a man of position, character, and education, the son of a former President and a conservative in his tendencies (it is said that he is not even yet a radical), has been appointed in his place.

There is an Argentine family of excellent social standing living in Buenos Aires who have played their part in the history of this country for generations, particularly in the Army. By birth and breeding they are as far removed from the present President as heaven is from earth, and are of the conservative element. But they have a

son of about 40 years of age, of American university training, who finds it hard to make a living because of bad health. Through the influence of Admiral Montes, a place as professor of English has been found for him in the national educational system.

He has "seen a great light" on the subject of the actual President of the Republic. And so the Chief Executive, in his hour of travail, is more concerned with the one or two sheep that may be outside the fold than of the ninety and nine that are within.

In the meantime, he is heeding the old motto "None but friends on guard" (using the word "guard" in its military sense), and there has been an unmistakable unfolding of a program to that end.

Maj. Gen. Uriburu is in absolute military command in the capital—a man whom my generally well-informed friend, Don Juan, said was a military joke. But the important point is that he is a good radical, which is more important than being a soldier—in the actual situation.

Admiral Montes, another good radical, has been made vice admiral over the head of Rear Admiral Juan Martin, a very popular officer, and has been placed in command of the "High Sea Fleet," as they call it here, which shows excellent judgment in view of the fact that the Navy may be called upon to play the more important part in the next uprisings, as it did in the last general strike. All of which is fully justified from the radical standpoint. They may have to fight for their very existence, and the President may find his life itself imperiled; and whatever the disinterested observer may think of it, Irigoyen naturally wants the men on guard who will best conserve his right "to the enjoyment of life, liberty, and property."

It is significant that the President had a conference at police headquarters on the afternoon of May 2, of two and a half hours' duration. He had got the impression that the police had not told him all they knew about the situation, and, accompanied by two members of his cabinet, he attended there for the purpose of seeing if he could learn anything by cross-examination which would justify that suspicion and justify his doubting the loyalty of the force. As I think I have told you before, I have known for months that there has been considerable spying done on the police, not only as to their acts but also as to their opinions, and officers and men about whom there was any question have been transferred to places where they could do no harm. As a result of this policy, I am told the police has never been in worse state than it is now.

In the meantime, Admiral Martin has been ordered to command the arsenal of war. In this place he can be watched, and if he shows a disposition to be good, he will probably be given some angle of the local situation to handle in the event of trouble. And if he handles it as he did on a somewhat similar situation in the general strike of 1918, in Mar del Plata, there won't be enough left of it after he is

through to justify calling in Undertaker Deck. It will undertake itself automatically.

At this point a comment must be made *very regretfully.*

The public at large know very well the splendid capacity of Gen. Dellepianne of the Argentine Army to deal with elements of disorder in times of uprising. They have had years of opportunity to study his great ability in handling large armed forces in times of tranquility and those of emergency. The Radical Party has shown quite a bit of diplomacy on occasions in citing some grave defect in a man's personal character as a reason for their failure to use his services more frequently. And it is unfortunately said to be true that he is lacking in self-control where women are concerned to an extent that detracts from his value as an officer and his undoubted powers of command.

The year 1921 in Argentine history.—As to the form which any uprising at present anticipated may take, I had sufficient information in hand last week to express two very definite opinions without fear of contradiction:

That there would be no trouble on Labor Day, May 1, and

That there would be trouble before the end of the year.

A considerable per cent of the public did anticipate trouble on May 1, and believed that it would be caused by the labor elements. And while the inside information from both labor and capitalistic sources flatly denied that contention, the Government decided to take no chances. I heard some days since that light artillery has been stored at strategic points where it could be used on the spot. And from a first-hand source on Labor Day, I learned that two details of police, one of 60 and the other of 70 men, were on duty all day in Plaza San Martin, and that the chief of police was there himself during the day to see how things were going. Through the city small details of police were abolished for the day and the men mobilized in large commands at barracks at what were regarded as possible danger points.

On the second point, revolution would seem to be inevitable unless the various factions in possession can find some working alternative program which can be executed without that loss of prestige to the country which must follow in the train of revolution, but one thing seems to be certain, and that is that the President must be eliminated and everything behind him for which he stands. For, as one experienced man put it to me, "It isn't merely a fight against the man."

Under this heading attention is invited to a report from me in your file, of about July or August, 1917, detailing a conversation had between Mr. Juan D. Pearson and Mrs. Chauncey Eldridge, of New York, on the main floor of the Plaza Hotel in my sight but not within my hearing, and repeated to me within five minutes thereafter by Mrs. Eldridge.

Mr. Pearson died very shortly thereafter, but the conversation has a significance to-day, because he was a brother of Samuel Hale Pearson, who is a power in this community, and for the further reason that the sentiments expressed by Mr. Pearson, deceased, are being spoken to-day by the "Distinguido" faction. In fact one of that type told me last week that he was greatly distressed and grieved by the present condition of affairs; that he had told a number of his fellow countrymen who have been in the United States that the North Americans must have an intensely poor opinion of Argentina if they judged it by the present state of affairs; that the class of men now in control were an ordinary lot; that the men of ability were not wanted; that while he saw no trouble ahead that seemed to be immediately impending, he thought that there would be trouble in time; that it would be a revolution, but a peaceful one. I asked if he thought it would come at election time (October 12, more or less). He exclaimed, "Suppose the President does not call an election?" Which question just fits in with suggestions which have been made at different times that the President would not relinquish his power willingly; that as he could not succeed himself under the constitution he would do the next best thing, either name his own successor or declare himself dictator, which he has virtually done already in the Provinces where he has intervened under the law which provides that intervention may be effected by the National Government in a Province when the President decides that the provincial government does not function at all. When the intervention in Cordoba had terminated and the Province elected a new governor, it went antiradical, and, the native press allege, to punish them the President ordered the State railways to impose a discriminating freight rate on goods from that Province, so that their produce pays far more to get to market than produce brought from far more distant Provinces, and as a result many people in Cordoba are suffering great hardship and their financial ruin seems to be impending.

It can be readily understood that such procedure is not making many friends for the President or his party. In fact, inside newspaper information is to the effect that there is a strong anti-Irigoyen sentiment rising up in the Provinces all over the country. And once let the vague suggestion that he wants to declare a dictatorship take definite shape, and his opponents will simply accept it as an invitation to start a revolution, on the negative theory of "Not if we get there first."

And when the revolution does come, as now seems reasonably well assured in many well-informed circles, it may result from any one of several causes, either political, as a protest on the part of the better citizenship of the country against bad government, and which fears that sufficient result can not be obtained through the ballot box, or

on the part of the labor element, based on the theory that having got about 90 per cent of all they have demanded from this government they now want to protest against their failure to get the other 10 per cent (and past chapters of their local history quite justify the idea that they are capable of doing just such thing), or it may result from a partisan feeling in national politics that this is a good year in which to get the opposite party out of power.

The first cause would undoubtedly draw the best elements to its standard, and, if successful, would effect its victory with the least possible harm, either in life, property, or the country's prestige, and it would undoubtedly draw a large "silent vote"—a faction which, for one reason or another, would not openly talk revolution, but would give its support to one started by any decent crowd.

Revolution has been freely hinted at, if not openly advocated, for a long time, and even the possible assassination of the President has been discussed in my hearing with the utmost frankness, as a means of relieving the present situation.

When the Radical Party made its fight in the last election (presidential) it was greatly aided to its victory by a considerable per cent of the conservative party who felt that their own crowd had been overfed with power and that the party needed a defeat to cleanse its system of vanity; and while they did not have a high opinion of the radicals, they counted on that party giving the country a decent, even though mediocre, administration. Some of that element feel now that the administration has not had the merit of mediocrity, that it has been aggressively bad, inefficient, and corrupt. One man who had this view was overheard to remark aloud at dinner in the Jockey Club, one night last year, that he had spent a good sum of money to help the Radicals to get into power, and that he was then ready to spend an equal sum to help them get out.

As to the second cause, that of an industrial revolution, I had the priviledge of reading a report some time since made by the secret service of one of the great railroads, through the courtesy of its submanager, and it was very evidently the opinion of the man reporting that any demonstration in force on the part of the labor party must of necessity have the financial backing of the partisan political elements opposed to the present Government. In fact a labor demonstration in the Province of Santa Fe two or three years since, which threatened to be serious but was nipped in the bud by the Government, was definitely reported to have been largely financed from the Jockey Club. Labor in that Province was disposed to inaugurate such a movement, and the calle Florida crowd were willing to help it along. "Politics make strange bedfellows."

There is still another cause given for expecting a revolution, and that was suggested to me the other day by a man in the street. It was an interesting theory, but those on the inside assert that it has not enough strength to support such movement. That cause is the long-standing feud between the President and the governor of the Province of Buenos Aires, Dr. Crotto.

Soon after the President was inaugurated in 1916, he took steps to intervene in the Province of Buenos Aires, and turned the governor, Dr. Palacios, out of office. Probably none of his official acts has met with less criticism than this one. Dr. Palacios belongs to the old powerful vested interested crowd, and the general feeling was that he was "guilty as charged."

Dr. Cantilo, the present intendente of the capital, was appointed interventor, and he made a good acting governor. But the statement has been made, and I have never heard it contradicted, that conditions were not found nearly as bad as anticipated. When an election for a governor was ordered, Dr. Crotto was the successful candidate, on the Radical ticket.

The President has often been alluded to as a very ordinary type of man. It might be said that Dr. Crotto is even more so, and yet he seems to have more sense of the common kind than Irigoyen, and he gets more support from people outside of his own party. It was not long before he was building up a political structure of his own. I attended a luncheon given in his honor by some of his adherents at the Carapachay Hotel in Olivos some two years since (etiquetically it could not be in the capital, because that is the only part of the Province where his power does not function). I anticipated that there would be several bucketsful of gush poured out on his head, to be responded to by a modest disclaimer of any merit deserving of such honor, which disclaimer would take an hour to disclaim. Now, what really happened was that after some two or three speeches, lasting about 15 minutes each, had been made, he waited for a moment to see if anyone else wanted to talk; and no one indicating any such desire, he simply bowed his thanks, got up, and moved toward the railroad station to return to Buenos Aires. I talked with him for a few minutes and found him to be a good fellow.

All this building up of a personal following by Crotto has greatly annoyed the President. He does not want any personal following in the Republic but his own. He wished Dr. Crotto to regard himself as a member of the cabinet, subject to the President's orders the same as any other cabinet minister. Dr. Crotto has insisted that he got his mandate from the people and that they were his only bosses. Consequently he and Irigoyen have been "off and on again" time after time. During these periods of intermittent peace between the two, the President was also at odds with his colleague, Dr. Luna, the Vice President of the Nation.

One thing that did not increase the President's high (?) regard for the Vice President was the rumor in circulation, which had the hallmark of truth on it, that the strong business element of the country was going to bring pressure on him to resign, and make that pressure so strong that he simply could not resist. And that then they proposed telling Luna that if he would give the country a good administration they would back him with all the power at their united command.

In the meantime there was a big port strike on, which lasted for many months, causing a huge loss in wages and business profits. The customhouse almost ceased to be a source of revenue for the Nation. Labor simply announced its royal will each day, and an alleged form of republican government made its decrees in strict accordance therewith. Of course, things could not go on indefinitely in this way. The country could not live without healthy business to nourish it. So, after not having spoken to Luna or Crotto for over eight months, he sent an emissary to ask their presence at the government house for conference. What Luna said history fails to relate, but Crotto was cunning and said that he wanted to be able to prove later who sought the interview. This condition precedent having been complied with, the interview took place.

It has been asserted that on that occasion Crotto rose entirely out of the realm of partnership and reached a height where sound politics, sound common sense, genuine statesmanship, and real patriotism became coterminous.

He spoke sympathetically, according to the generally accepted reports of the occasion, of the President's position in having yielded so much to labor, that while he might regret having gone to such an entreme, he could not now reverse his decrees, for it would make him ridiculous in the eyes of the world. So Crotto proposed that Irigoyen take a vacation of 10 days, at some future date to be arranged well in advance, and demit his powers for that period to Dr. Luna. In the period intervening before the date of his, Irigoyen's, departure Luna and he, Crotto, could draft the various decrees needed for a complete reversal of the Government's port policy, to give shipping interests a greater liberty of action, nonunion labor freedom to work, and to compel union labor to keep within the law. These decrees could be signed and published the minute the President was out of the way, and the necessary orders could be given for their immediate enforcement. Then Dr. Irigoyen could return at the end of 10 days to find them in full operation. And the Vice President and Crotto would grant him full power to denounce the former publicly for shameful misuse of power and the latter for having used improper influences.

But Irigoyen was not big enough to accept the chance offered him to escape from a ridiculous position, and the scheme fell through.

One episode which made life almost unbearable for the present was Crotto's entry into the realm of diplomacy and foreign relation from the government house at La Plata.

At one week end, about two years since, it was suddenly announced that the next day Sir Reginald Tower, the British minister, would visit La Plata to pay his respects to Gov. Crotto. He arrived in the provincial capital and was received with rather more honors than if he had been going to the "Casa Rosada" to present his credentials. After his speech and the governor's reply, there was a police parade or something of that character, and a reception by the British colony and a dinner in the evening. So that it was borne in upon Irigoyen's sensitive soul that Crotto was setting up a miniature court of his own and succeeding rather well at it.

Crotto has been repeatedly guilty of acts of political insurgency and disobedience of the President's orders and seems to have the public sympathy in so doing. Finally, several months since, there came a very serious breach; and, according to reports, it terminated in Crotto's promise to be good thereafter and take his order from the President. But that truce has been broken, and during the past month there has been a more serious break than ever. And Crotto is said to have asserted that if the President carried out his intention of doing certain things already threatened he, Crotto, would resist the attempt with all the force at his disposition. Which statement gains added significance by reason of the statement, which is accepted as true, that Crotto, under the guise of increasing the provincial police force which is entirely under his jurisdiction, had in fact created a small provincial army, and could put up a good fight if necessary. And to return to the text of this branch of the subject, "a man in the street," a Spaniard who has lived here for many years, has volunteered the remark to me that he thought a revolution was coming as a result of the Irigoyen-Crotto feud. But the more intelligent element doubt that theory, claiming that Crotto has insufficient military strength, money, or popular backing, and that if a revolution does come it will include much larger problems than the individuality of one man.

It is curious to note the number and class of Argentines who are going abroad just now. One "distinguido," who is bitter against the present Government, is leaving for England. He predicted a revolution to me last week. "When?" I asked. "*Before the end of the year,*" was the reply. "When do you return?" I inquired. "*At the end of the year,*" he answered. Maj. Gen. Vallee of the Argentine Army, recently retired, who has had a duel with the Minister of War, has obtained *18* months' leave of absence with permission to go

abroad. It must be remembered that the Argentine Government has always been sensitive about retired officers and pensioners spending their stipend in this country.

On the subject of financial matters, I might add here that since beginning this report I have learned that immediately after the vote in his favor Dr. Salaberry, the Minister of Finance, applied to the Bank of Buenos Aires for a loan of a million pesos, and that it was refused.

I talked with a well-known British newspaper man (May 2) who is in touch with both capitalistic and labor circles, and he summed up the situation in this way: 1. That if the Conservatives, Democrats, and dissenting Radicals can get together, the change can be effected without a revolution. The Socialists will flock by themselves and help neither party.

I talked with another well-known newspaper man who is supposed to be the most expert journalist on camp conditions in this country, and he has recently traveled over a considerable area of the Republic. He says that the sentiment to-day in the camp is absolutely against Irigoyen, not in one section but all over the country. It is deeper, however, than that. It is against the whole system in power to-day. But there will not be a revolution, unless Dr. Joaquin Anchorena can be induced to accept the conservative nomination for governor of the Province of Buenos Aires, and enormous pressure is being brought to bear on him to do so, from Corrientes on the north to Chubut on the south. His acceptance would make him a sort of uncrowned king of the antiradical elements, and would give such confidence in the success of any attempt that it would force the situation. Dr. Anchorena is said to be fully conscious of the fact and to be holding back his answer for patriotic reasons, in doubt as to whether the end to be sought is one that would justify him in subjecting the country to the loss of prestige that is likely to result from such an uprising.

Dr. Anchorena is probably the most complete of the man who is all things to all men that this country possesses. He has a distinguished ancestry, wealth, university training, and professional status (as a lawyer). He has been mayor of Buenos Aires and for some years president of the Argentine Rural Society, which, while an honorary position, makes him the head and makes him a power among the cattlemen throughout the country. He has a personal magnetism and is a "good mixer." One old man, who has known the political game here for many years, says that Joaquin Anchorena is a good fellow but he doubts his capacity to lead a revolution, but this journalist says that he had regarded him as a light weight until he had an opportunity of seeing how he handles the cattle shows, which includes the hard job of keeping the camp element contented.

One of the most dangerous features of a revolution in this country is that the Radicals make "bad losers." The bad feeling excited by their defeat shows a capacity, literally, to survive "until the third and fourth generation," for their failure in the nineties was still in the hatred thereby engendered when they made their fight in 1915, and there is no doubt but what there would have been a revolution here in that year if their candidate had not been counted in.

The above compromises some rough notes hastily thrown together containing arguments pro and con as to the chance of there being a revolution in this country in the near future. My personal feeling is that the chances are against it in about the proportion of 51 to 49.

In conclusion I can only add that during the year 1918 the Pacific Fleet arrived in the River Plate from Rio de Janeiro. It was stated in the local press that it had come to these waters on another friendly visit to Montevideo. The report was current here that that was simply an excuse; that they had selected Montevideo as a convenient point from which to watch developments in the general strike then pending in Buenos Aires. One Englishman in Buenos Aires, who regarded this explanation as being the correct one, volunteered the statement that he felt great satisfaction in the consciousness that there were 4,000 American sailors within easy steaming distance of Buenos Aires.

THE FOREIGNER IN CHINA.

Source: Reliable.

(12358.)

31 May, 1921.

Great Britain.—At the time of the organization of the anti-Japanese boycott in 1919 an effort was made by some Chinese to organize a boycott against the British. This failed largely because it was felt that such a step would be playing the Japanese game, that it would divert the issue from Japan to all foreigners, and might lead to serious international complications. During this boycott many Britishers showed great sympathy with the Chinese and said that the Anglo-Japanese alliance would never be renewed. The campaign of the Peking and Tientsin Times against the Japanese opium dealer and the attitude of the North China Daily News toward the Chinese were taken to indicate a more friendly attitude of Britishers in China toward China. It must also not be forgotten that the British chambers of commerce showed sympathy with the Chinese in the Shantung fight by expression of opinion, speech, resolution, etc.

The Chinese then felt that there was genuine significance in the A. B. C. idea; that is, America, Britain, and China would cooperate to free China from Japan. And to the Chinese this did not appear inconsistent with Great Britain's interest, since China was one of her

best markets, and it was not altogether unreasonable to expect that she would prefer to keep the friendship of the people in this market.

The fact that the British supported the consortium when Mr. Lamont was here was also taken to indicate that Great Britain was breaking with Japan, that she was demanding an accounting for the activities of Japan in China, in British spheres of influence in China, during the war. Later the Chinese were permitted to select an advisory committee to the Shanghai municipal council, which further pleased them. So for a while everything began to look fairly all right between the Chinese and the British.

Within the past four months, however, on both sides sentiment began to change. The Chinese began to notice a change in tone among Britishers. Then came the assurances that the Anglo-Japanese alliance would be renewed. Also the bitter propaganda against America and Americans in China among many Britishers, which seemed to lead to only one conclusion, namely, that in a quarrel between America and Japan, Britain would side with Japan.

Also, stories began to filter down from Peking about the attitude of the British banking group toward Mr. Frederick W. Stevens. The stories were in effect that Mr. Stevens had tried to prevent political loans from being made and that the British and Japanese banking group were in favor of it. They were anxious that the American banking group put up the money, while they did the managing. In other words, the old story of American money and British experience, with a seasoning of Japanese brains. The Chinese thereupon became more embittered against the British.

Another factor in this situation is the attitude of the British toward Sun Yat-sen. Shanghai and the merchant class throughout China have little sympathy with Sun Yat-sen, but they object to foreign interference in internal Chinese affairs. They particularly object to an attempt on the part of any group to assist Kwangsi. As much as Sun is disliked, Kwangsi is more disliked. Therefore the stories which came from the south with regard to British assistance to Kwangsi is producing a very undesirable impression. These stories may be untrue, as the North China Daily News suggests, but that is not very important, for impressions are not produced by the veracity of a story as by its acceptability. The masses believe that the Hongkong Government is trying to make an arrangement with Peking whereby the Kowloon concession can be extended. This is pleasing to no element among the Chinese.

Finally, the activities of the British in Turkestan, although they have not received the publicity which was given to Japanese activities in Shantung, are known to the Chinese and are producing very unfavorable impressions. The fact that appeals from Kashgar go not to the supreme court in Shanghai but to the Punjab court has

produced the impression that the British Government is trying to turn Turkestan into an appendage of Tibet, and thus of India. The Chinese have watched British activities in Szechuan, Yunnan, and Turkestan with the greatest fear. They see in such activities a regional understanding between Britain and Japan, delineating new spheres of influence, with perhaps the Yangtsze as a meeting point—North China to Japan, South China to Britain.

The result is that on all sides one hears talk of an anti-British boycott. The signing of the Anglo-Japanese alliance, with clauses concerning China, will not help Britain at all. On the other hand, an anti-British boycott will be harmful to China, for the Japanese and corrupt officials in China would use such an occasion as a smoke screen for their own politics. Any confusion of the Japanese issue can only help Japan.

Japan.—The position of the Japanese is stated in my memorandum of May 25. Since then there has been a slight development. The Kirin-Huining Railway agreement, it is reported, has been signed, but it has not aroused the antagonism anticipated. The reason is that no money has actually passed hands, and the leaders here are afraid that their strength will be dissipated. They want to wait for something bigger, which they are certain will soon happen.

Japan is moving every stone to bring about a friendlier attitude on the part of Shanghai merchants. They are sending commercial delegations here, who constantly denounce the Japanese militarists and who insist that the Japanese business man is altogether a different sort of person. When a Chinese, like Dr. F. C. Tong, asks them why they do not rid their country of the militarists, they have no reply. They also extend long credits to Chinese merchants for goods now purchased, and this in spite of the fact that in Japan business now is not very flourishing.

The anti-Japanese attitude is constantly growing more intense in this part of China. There is, however, a belief that this statement is lessening in North China.

America.—The whole question hinges about the consortium. If the consortium fails, or becomes a tool of the British and the Japanese, America's reputation will be seriously damaged. The Chinese are friendly to America, but they are weary of promises not kept. Furthermore, the Chinese are looking for a definite protest on the part of the United States toward the Anglo-Japanese alliance. If that protest is not made, it will indicate that America's far eastern policy is not as definite as has been advertised.

Russia.—The Chinese people have never interested themselves in the internal affairs of Russia. They regarded antisoviet propaganda as big nation opposition to the smaller and weaker states. Now they are anxious for a resumption of trade relations with Russia. The

visit to Shanghai of Mr. A. Hodoroff was very successful. He made a splendid impression here upon Chinese and foreigners alike.

The liberal and radical elements here are of the opinion that the weakening of Japan could best be accomplished by a close alliance between Russia, China, and the United States. They also feel that should such an alliance be consummated and publicly announced, Japan would climb off her perch and stop talking about a war with the United States. The Chinese of this section would regard such an alliance as a godsend.

Germany and Austria.—These people are here trading either as Germans or Austrians, or as Poles and Czecho-Slovaks. They are offering goods at lower prices than other merchants because of favorable exchange. They are constantly denouncing all the western nations, particularly the United States. They appear to be very friendly toward Japan.

On every occasion they try to convince Chinese that extraterritoriality ought to be abolished. They appear to be more pro-Chinese than the Chinese themselves. An incident will indicate their attitude. A Mr. Max Engel, formerly an Austrian and now a Czecho-Slovak, attended a dinner at which Chinese and foreigners were present. During the conversation he also sided with the Chinese on propositions which even the Chinese themselves oppose. But he capped the climax when wine was ordered. The waiter brought a French wine. He said, "Why should we give foreigners large profits? Let us have Chefoo wine. It is much better." Perhaps Mr. Engel was right about the Chefoo wine, but his manner was so ostentatious and malevolent that afterwards even the Chinese referred to it.

I have had similar experiences with other Germans and Austrians which justify me in believing that this attitude was not exceptional.

Italians and French.—The French are now regarded as a second-rate people. The Chinese do not understand why so much attention is paid to them. They have never been liked very much.

The Italians are utterly disliked. They act as compradores for corrupt Chinese firms, such as medicine shops, opium dealers, etc.

Generally speaking, antiforeign sentiments are on the increase. The "China for the Chinese" movement is growing. The sentiment is growing that from no foreign nation has China much to expect. Viewing the situation as impartially as possible, one can reach only these conclusions: (1) The Americans are disliked less than other foreigners; (2) other foreigners are either ignored or disliked; (3) all foreigners are regarded with suspicion amounting almost to distrust.

ADVISORY COMMITTEE REPORTS ON NEEDS OF DUTCH ASIATIC SQUADRON FOR NEXT 12-YEAR PERIOD.

Source: Reliable.

(13778.)

23 June, 1921.

The Government commission established to advise on the matter of the defense of the Dutch East Indies to-day (June 14) presented its report to the governor general, which states that the Dutch East Indies must within the next 12 years create a naval power consisting of 4 battle cruisers, 24 destroyers, 32 submarines, 4 submarine mine layers, 4 modern flotilla ships, 9 mine layers, 1 mother ship for submarines, and several auxiliary ships. The air power, the report states, must in the same length of time be built up to 72 reconnoitering planes, 18 pursuit planes, and 18 bombing planes.

Since 12 years seems to the commission to be a very long period of time to lay down definite plans because of the rapid changes in modern weapons of warfare, it is stated that during the next 6 years there must be built at least 2 cruisers, 16 submarines, 12 destroyers, 2 submarine mine layers, 4 flotilla ships, 9 mine layers, one mother ship for submarines, and several auxiliary ships, while the plans for the air force should be completed in full.

At present there are building in Holland proper two cruisers of 7,000 tons, each with a speed of 36 miles, the *Java* and *Sumatra*, both of which are destined for service in the Dutch East Indies squadron, and 12 submarines, half of which have already arrived in the colony. These vessels are not included in the report and plans of the advisory commission.

ENGLAND'S MARINE POLICY.

Source: Vossischen Zeitung.

(12093-B.)

31 May, 1921.

May 31 is the anniversary of the Battle Skagerrak, which the English call the "Battle of Jutland." This date gains greater importance as the beginning of a new period in the naval history of England and naval history in general. England is dividing her warships into post-Jutland and pre-Jutland ships, and bluntly expresses valuable judgment. This justifies investigation how England has constructed her fleet after this date and how other naval powers have acted after the lesson of Skagerrack day.

France and Italy have not been able to keep pace. The ever-increasing cost and maintenance and enlarging modern fleets have left them hopelessly behind in the field of naval armaments; only America and Japan kept pace and at the heels of England. England still adheres

to the viewpoint, in spite of the revolution the World War has brought about, that the large naval powers can not entirely dispense with large ships. In spite of indisputably great results, U-boats and airships can not replace conglomerate artillery strength, which is a deciding factor in a battle on the high seas. U-boats and airships which have no base or support in a cruiser or fleet battle can not have any material success for any length of time against the highly developed defense measures. In spite of this realization, England has voluntarily decided to remain inactive in construction of huge ships, and apparently quietly looked on to observe how America and Japan spared no efforts to enlarge and extend their fleets. It is true they had no such instructive battles as the experience gained by the English at Skagerrak, as a result of which they built only the *Hood*. As Germany had ceased to build line ships after 1916, which was known in England, there was no reason for England to build battleships which would very soon be technically outstripped.

The superiority was assured by mutual inactivity. The mass of material and personnel was concentrated for U-boat defense and the blockade, and note was taken of the time in which the other powers would equal England in numbers. This time has arrived, and it does not appear accidental that at the same time the Parliament conference of the British imperium takes place which will adjust the viewpoint to orientate the British fleet policy.

Now that an agreement is about to be made with the United States relating to all important political questions, including the principles of their naval equipment, we may view the minimum of needs relating to huge battleships. The proportion of the present naval strength for England, Japan, and the Union, as guide for English calculation, is given in the following table:

Class.	England.		United States.		Japan.	
	Number.	English tons.	Number.	English tons.	Number.	English tons.
Battleships:						
In service	13	413,350	10	320,904	6	191,320
Built after 1916	.....	.....	8	264,104	5	160,720
Under construction or provided for	.....	.....	9	370,770	4	174,000
Battle cruisers:						
In service	4	145,000	.....	.....	2	55,225
Built after 1916	3	110,000	.....	.....	.....	.....
Under construction or provided for	.....	.....	6	271,000	2	81,200
Light cruisers:						
In service	53	293,500	.....	.....	6	29,000
Built after 1916	34	215,990	.....	.....	6	29,000
Under construction or provided for	.....	.....	10	76,100	5	29,000

Class.	England.		United States.		Japan.	
	Number.	English tons.	Number.	English. tons.	Number.	English tons.
Torpedo-boat destroyers:						
In service	208	153, 494	299	354, 854	46	45, 925
Built since 1916	196	139, 562	274	328, 318	35	36, 020
Under construction or provided for			18	36, 600	16	24, 000
U-boats:						
In service	121	100, 883	121	79, 108	30	26, 630
Built since 1916	199	100, 260	109	73, 228	30	26, 630
Under construction or provided for			27	54, 000	15	30, 000
Air material supply ships:						
In service	7	95, 775	4	41, 200	2	17, 600
Built after 1916	6	88, 325	4	41, 200	2	17, 600
Under construction or provided for			3	45, 000	2	40, 000
Total completed ships, first class	406	1, 204, 002	434	796, 066	92	365, 701
Built after 1916	358	654, 137	395	706, 850	78	209, 970
Total under construction or provided for			73	852, 870	44	378, 200
Complete and under construction or provided for, 1921	482	2, 334, 002	507	1, 898, 936	136	743, 901
Constructed after 1916	358	654, 137	468	1, 559, 729	122	648, 170

Totals are given in English tons, as the compilation of tables is given in the English Naval Hand Book, by Jane, "All the world's fighting ships, 1920." Only modern ships after 1914 are given.

But it is an open secret that France seeks the legacy of Germany, not only military on the Continent but also maritime, by constructing a U-boat fleet. At the end of July, 1922, the submarine fleet of France will consist of 180 boats. French shipyards are able to fulfill this program, as France has no large ships and no large ships on the stocks.

Therefore England is between two fires—one friend is building U-boats and the other two battleships. Shall she build only airships for bombing, and mines? With those alone she can not protect a world power in five parts of the globe and 20,000,000 tons of merchant marine even if tens of thousands of airships are distributed all over the globe. The ocean as a battle field is too large and coasts are too long. The support and backbone of a great sea power have been, and for time to come will be, battleships, cruisers, and destroyers.

England would not be the first naval power of the world if it had not realized this long ago, and the representatives of the British imperium will have a new naval construction plan submitted in June which will be of extraordinary significance in our era of bil-

lions. The cost of a modern battleship (840,000 tons) to-day in America is 120,000,000 gold marks, or 1,400,000,000 paper marks. In England they are now planning a squadron of 8 line ships of an entirely new type, with all modern comfort and profiting by all the experiences of the late war; new oil burners, motor propulsion gearing transmission of the shafts, side buffers against torpedoes, turbines, several airships on board, submarine mine layers, wireless telephone, nor more mast, long-range guns to 60 kilometers, and torpedoes 70–80 centimeters in diameter, smoke screen for the entire ship, three to four armor-plate bottom against mine, and other things to enrapture the technician. The other type to be built will be similar to the other battleships, which will also have armored plate decks. The cruisers will have heavy guns like the *Glorious* class; the destroyers will be very rapid, and the U-boats take part in daylight battles. Airplanes and stationary defense means will not be neglected. A large number of auxiliary ships will be built. The English fleet, which was confined to home waters by the ambitious and dangerous German fleet, is again free to choose the places for its activity. Dividing the ocean into English stations may begin again.

The five post-Jutland years were only apparently years of inactivity. England has worked hard in the shops and offices, and in June it will surprise the world with novelties which have been not equaled in the ocean history.

EXTRACTS FROM THE OFFICIAL REPORTS OF FLAG OFFICERS AND COMMANDING OFFICERS OF THE GRAND FLEET ON THE BATTLE OF JUTLAND.

Source: Lieut. Commander H. H. Frost, U. S. Navy.

In this and subsequent issues of the Bulletin, extracts from the British official reports will be published under the following parts:

Part I. Cruiser.
Part II. Light cruisers.
Part III. Destroyers.
Part IV. Aircraft.

These extracts will be further divided under the following sections:

Section A. Gunnery.
Section B. Torpedo fire.
Section C. Engineering.
Section D. Communications
Section E. Miscellaneous.

PART I. CRUISERS. SECTION A. GUNNERY.

Second Cruiser Squadron (Rear Admiral H. L. Heath).

1. At 7.11 p. m., I proceeded with the squadron at 20 knots to take up station astern of the battle cruiser fleet who were engaged with the enemy. Orders were given to open fire if favorable opportunity occurred. The control officer, however, quite rightly withheld his fire, as he could see nothing to range on or spot by, and considered it would be an absolute waste of ammunition which might well be required the following morning. The cruiser squadron was successful, however, in drawing some of the enemy's fire. One salvo fell short on the starboard bow of *Minotaur* and some others in close proximity; others near to other ships of the squadron. Later on, observing that the battle cruiser fleet was altering course away from the enemy, I followed suit.

"Minotaur" (Capt. A. C. S. Hughes D'Aeth).

2. At about 8.30 p. m., salvos of large caliber fell ahead of us on our starboard bow, and shortly after one salvo fell short abreast of the ship. I asked the gunnery lieutenant in the top whether it was any use our opening fire, laying on the flashes of the enemy's guns, and he replied that he thought it would be a waste of ammunition as he would be unable to spot anything but a direct hit, and with this I quite agreed, so we hauled out a couple of points so as not to steam into the salvos. Shortly after this the firing ceased.

"Hampshire" (Capt. H. J. Savill).

3. At 5.52 p. m., a ship was sighted on starboard bow steering to NE. and challenged. At the same time course was altered to N. 70 E. to conform with *Minotaur*. The challenged ship replied "Zwanzi," and 5.56 p. m. fire was opened on her at 9,500 yards bearing S. one-half E. This ship appeared to be a three-funneled cruiser, probably the *Kolberg* type, and appeared to be standing to the NE., and one, possibly two, more ships (battle cruisers?) appeared in the haze for about two minutes ahead of her. Four salvos were fired at her in three minutes; the first missed to the right, the second appeared to hit and light smoke and steam appeared from the base of the center funnel. After the second salvo the enemy turned away and were lost in the haze. These ships seemed almost white.

"Cochrane" (Capt. E. Leatham).

4. About 4 p. m., heard firing on starboard bow. View during practically the whole of the action was obscured by funnel smoke of *Minotaur*.

5. Enemy salvos were consistently about 2,000 yards over B. C. F. and appeared very ragged. A number of shell were observed to burst on graze.

"Warrior" (Capt. V. B. Molteno).

6. *Warrior* and *Defence*, after sinking an enemy light cruiser, came under the fire of the enemy's battle cruisers. *Defence* was observed to blow up shortly afterwards, having been struck by two salvos in quick succession. *Warrior* also received pretty severe punishment, both engine rooms being soon flooded by hits well below the water line, as well as by several hits about the water line and through the upper deck. The engines, however, continued to revolve and carried the ship out of action in rear of our line.

7. At 6.19, *Warrior* turned to starboard, and *Defence* was observed to be hit by two salvos in quick succession. A huge furnace appeared to be under her fore turret for quite an appreciable time (10 seconds, perhaps) and then she blew up and disappeared.

8. From the time of about 6.7 onwards *Defence* and *Warrior* were being straddled by heavy salvos (11-inch to 14-inch).

9. At 6.32, I received a report that starboard engine room was disabled, and at 6.33 that both engine rooms were disabled, and shortly afterwards that there were two or three fires on the main deck, one especially bad around the ship's and armament offices, which blocked access to the engine rooms. During the whole time the *Warrior* was withdrawn she drew the fire of at least four of the enemy's heavy ships, first they appeared to be battle cruisers, but latterly were certainly battle ships.

PART III. CRUISERS. SECTION C. ENGINEERING.

"Duke of Edinburgh," (Capt. Henry Blackett).

1. The highest speed worked up to in endeavoring to close *Defence*, and failing that in proceeding to the van of the battle line, was 136 revolutions (about 22 knots); this is the same number of revolutions steamed on the contractors' 8-hour full-power trial in November, 1905. This took about half an hour to work up to.

2. The volume of smoke made by this class of ship on all occasions of increasing to full speed is very large and thick and masks the fire of many ships in the vicinity, so that positions different to those originally intended or generally ordered have to be taken up.

PART III. CRUISERS. SECTION D. COMMUNICATIONS.

Second Cruiser Squadron (Rear Admiral H. L. Heath).

1. At 5.40 p. m. heavy firing was heard ahead, and soon after ships were seen in the mist. Ships of Second Cruiser Squadron were recalled and formed into line, and signal made to engage the enemy. The conditions were exceedingly difficult; there appeared to be one enemy cruiser, but the others were doubtful; but before fire was opened, a reply to the challenge was received and showed the ships to be our own Third Battle Cruiser Squadron. The cruiser was not seen again.

"Minotaur" (Capt. A. C. S. Hughes D'Aeth).

2. At about 5.50 p. m. several vessels, two of them large, were seen in the mist bearing down on us. On receiving no reply to the challenge, we altered course to port so as to bring them abaft the beam, and repeated the challenge. Receiving no reply to this, I ordered the starboard battery to open fire, but almost immediately received a report from the top that they could recognize one of the vessels as the *Invincible* class, and almost at the same time a ship came through the mist, and I recognized her myself.

PART III. CRUISERS. SECTION E. MISCELLANEOUS.

"Hampshire" (Capt. H. J. Savill).

1. A number of reports from submarine lookouts were made, but the following cases appear on investigation to be reliable.

Many of these reports were made due to the extraordinary way in which the water was churned up by the number of vessels at high speed in close proximity.

At 6.05 p. m. a periscope was reported on port bow and ship was turned toward it and fire opened on it. *Midge* also went toward it. This was undoubtedly a dummy, and was observed very clearly from the fore bridge.

2. At 6.54 p. m. fire was opened on a periscope on port beam, and ship turned in that direction. It was seen by officer of Y group, fore turret, and control top. It dived and was not seen again.

3. At 8.40 p. m. an unmistakable jar was felt in fire-control position, fore turret, "A" turret, fore T. S., fore cross passage, and fore "A" and "B" shell rooms, and a very large swirl as from a submarine almost breaking surface was seen in our wake, and must have passed about 20 yards from starboard beam of *Chester*. Also the periscope was seen at an angle by at least two observers. The shock was sufficient to knock down a projectile in the fore turret, cause the men in the fore shell room to inquire if the ship had been torpedoed, and nearly knock men in submerged flat off their feet.

"Shannon" (Capt. F. Dumaresq).

4. 8.40, *Shannon* struck some object which bumped along under the bottom.

"Duke of Edinburgh" (Capt. Henry Blackett).

5. 7.55, several rounds of 3-pounder fired at submarines reported on our port bow by *Hampshire*. I think this was only a school of porpoises; in any case the reported position was one most advantageous to attack us or the battle fleet; and though a careful watch was kept, no tracks of torpedoes were seen.

ADMIRAL BARON URIU SUDDENLY GOES TO UNITED STATES TO AID IN BETTERING JAPAN-AMERICAN RELATIONS.

Source: Reliable.

(11345-P.)

25 May, 1921.

From Jiji, May 9, 1921:

Two or three days ago Admiral Baron Uriu suddenly came to Tokyo with his wife from his villa at Odawara, and, stopping at the Imperial Hotel, began to busy himself for a journey. It was reported that he had been requested by the Foreign Office to go to America. Upon being interviewed by a reporter he stated: "I am leaving on the 9th of May on the *Shinyo Maru*, entirely in my private capacity. You may doubt it, but the fact is I am a graduate of the American Naval Academy, and I have been asked by my classmates to attend my fortieth anniversary, and my sudden trip has no other significance. I am considerably concerned about Japanese-American relations, but I have not received any particular request from the Foreign Office at this time. As my classmates have all become renowned, I should like to see what they are doing. I do not know how long I will stay, but as people imagine too much on account of overexcited nerves, which makes trouble in diplomatic relations, I hope you will understand that I am going entirely in my private capacity."

Admiral Uriu called on the American naval attaché on 7 May to announce his immediate departure for America. He stated that he had made the decision in 24 hours, with no thought of going prior to that time.

Is evidently sent to make for good feeling.

Admiral Uriu is always used whenever it is desirable to make good feeling between Japan and America. Not only did he call on the naval attaché, but also on the American chargé d'affaires.

INCREASE OF SOCIALISM AND ANARCHISM IN JAPANESE ARMY.

Source: "Yamato" of April 23, 1921.

(9952—D.)

3 June, 1921.

In the Army there is a tendency of a gradual increase in number of men who entertain socialistic or anarchistic ideas. So the Directorate General of Military Training has appointed a committee of five members, under Lieut. Col. Goda, to enter upon inquiries into the matter. According to that officer, the creation of the committee is traceable to the necessity of adapting military training to the trend of the times, by studying modern thoughts from foreign and domestic books and other materials. Young officers in town are able to get a general idea of socialism or anarchism, as they have many chances of reading books or hearing lectures on new thought. But their comrades in the country find it pretty difficult, for want of time, to wade through a great many books and understand what

modern ideas are. In spite of the difficulty, the actuality is that recruits have concerned themselves in labor movements from the standpoint of democracy, socialism, communism, or anarchism. It must, therefore, be learned, by all means, what relations and ideas underlying such a doctrine bear to the present military thought and spirit. In case there appears a recruit that advocates a doctrine diametrically opposite to military discipline, it will only inflame his hostile feelings if we blindly force submission on him. In such a case there is the necessity of reconciling his cherished ideas to these ruling the Army. So it is intended to distribute to officers that are devoid of time for sufficient study, copies of a booklet on these modern thoughts which are sound, moderate, and just, for the purpose of enabling them to understand the general principles involved in the doctrines. As there are various reports sent in from the military police on the ideas entertained by officers and men, it is also intended to compile a similar book for officers in general and privates, consulting these reports. According to the progress of the work, inquiries will be conducted in a definite manner about individuals in concert with the War Department and the military police. However, the scope of study and investigation is not yet agreed upon by all the members, whose opinion is divided. It must be well considered if it be right for military men to enter into the field of politics. Anyhow, difficulties will, it is expected, present themselves as the inquiries progress.

ARMY TRAINING—JAPAN.

Source: Reliable.

(10588—A.)

25 May, 1921.

A foreigner who has been in Japan for some 20 years, and who has had unusual opportunities to judge, states that the Japanese Army training has been a great factor in the development of the Japanese people.

Not only are the ignorant, stupid, and awkward peasant class taught to handle themselves, and to do many things that will be useful to them after their military service is completed, but are put to school and taught.

The Army not only teaches discipline, patriotism, personal cleanliness, and sanitation, but also gives the soldier an opportunity and assistance for an education.

He returns to civil life a better citizen and with an improved equipment for making his way in the world.

The soldiers are ambitious and industrious, and seize the opportunity to learn all they can.

The life in the Japanese Army is very hard; the Spartan ideal is the one followed. The drills are incessant; the marches and other physical exercises very arduous. Bad weather is chosen to harden the soldier and to test his endurance.

Other well-informed people agree that the Japanese soldier is overtrained. He gets too much drill, too long marches, and too much instruction. He gets stale and worn out as a consequence.

This seems to be appreciated of late by the military authorities, who are giving the soldier many more opportunities to leave the barracks for recreation and change of scene and atmosphere.

The army ration is inferior to the navy ration. The soldiers look less well fed and not so robust as the sailors.

The Japanese Army and Navy spent 10 years preparing for the war with Russia, and during that time the irksome discipline and drill and barrack life were mitigated by the belief that the disagreeable features were necessary for the defeat of the foe that menaced their existence.

Since then such an inspiration has sometimes been lacking, and of late years the young men of Japan have evaded their military service whenever possible.

This does not necessarily mean that their patriotism has waned or failed, but that materialism has infected Japan, as other nations, and that the present-day patriotism is much less unselfish and self-sacrificing that it used to be.

JAPAN GETS ARMOR PLATE FROM ENGLAND AND SWEDEN.

Source: Liverpool Journal of Commerce.

(14187.)

23 June, 1921.

The Liverpool Journal of Commerce reports that—

The order which the Japanese Admiralty recently placed with a Sheffeld firm for armor plate is nearly completed; the last of the plates will be through the furnaces by Whitsuntide. Apparently it is the desire of Japan to make herself independent of outside help in the production of a battleship complete, judging by her recent purchases and inquiries.

Recently some of the armament machinery from Sheffeld armament works have been sold to Japan, and an inquiry has just been received for a 16,000-ton armor-plate bending press.

Other significant purchases are of Swedish pig iron, which is regarded as an essential material in the manufacture of battleship armor and guns. A few days ago the Japanese Admiralty completed the purchase of the third lot of 5,000 tons of Swedish pig iron this year, and it is understood that further purchases are to be made shortly.

JAPANESE ATTACKS CHILD OF AMERICAN CONSUL, NAGOYA, JAPAN—AMERICAN GIRL ATTACKED ON MAIN BUSINESS STREET, TOKYO.

Source: American Consul, Nagoya, Japan.

(11345-Q.)

3 June, 1921.

On 21 May, a report of the American consul, Nagoya, Japan, states that the 8-year-old child of the consul, Mr. Hawley, was attacked without reason by a Japanese, who carried the child from the house garden to the street, where he knocked him down and beat and kicked him, running away when other people approached.

The child was not seriously hurt. The assailant was arrested and admits his guilt.

On the afternoon of 23 May a young American girl was walking along the principal business street of Tokyo; she was struck by a Japanese who got out of a ricksha and attacked her without any provocation whatever. He told her in English that he had struck her because she was an American, and threatened to kill her with a revolver. She ran along the street and into the offices of an American firm. The Japanese followed her into the building, where he was seized and turned over to the police.

A crowd of Japanese followed the girl and man down the street, nobody protecting her in anyway, and stayed for some time in front of the building into which she ran. The police were reluctant to arrest the man, and are now holding him at his home in Yokohama, while the question of his sanity is being investigated by the police. The embassy is proceeding in the matter.

The man, Saburo Minabe, has been considered for some years to be of unsound mind. He has spent more than 10 years in the United States, having gone there twice. His most insistent hallucination has been that he has been the victim of American persecution. His relatives say there is no real basis for this idea.

PEOPLE OF JAPAN LOSING INTEREST IN QUESTION OF DISARMAMENT.

Source: Reliable.

(12495-B.)

23 June, 1921.

On June 6 Mr. Ozaki returned to Tokyo from another armament reduction lecture tour in the western part of Japan. He delivered 60 lectures and distributed 60,000 post cards. Only half the number of post cards were turned in with an expression of opinion. Ninety-five per cent of the cards turned in favored reduction of armament. Mr. Ozaki believes that most of the 30,000 who failed to turn in cards

are mildly opposed to armament reduction. Although he lectured to crowded houses, he regretted the lack of interest shown by the public.

On June 11 he starts for Hokkaido, which will complete his tour of the country.

A very marked decrease of public interest in the question has been noted in the past few months. The Army and Navy were, in the beginning, bitterly opposed to, and quite worried about, Mr. Ozaki's lectures, but of late their attitude has undergone a change; and if they are not now actually elated, they at least feel and state that as a result of these and other lectures the people have been made to realize the importance of maintaining armaments.

The Navy has dispatched people to hear and report on Mr. Ozaki's lectures. At one of the recent ones he was rather severely interrogated by the audience. The outcome, as reported to the Navy Department, was that the people admitted the Army could be reduced, but were convinced the Navy must be strengthened.

INCREASE OF NAVAL ENLISTED STRENGTH, ACTIVE AND RESERVE.

Source: Reliable.

(13266.)

23 June, 1921.

There has been considerable discussion in regard to the necessary increase of naval enlisted personnel to meet the demands of the 8–8 fleet.

Such an increase must necessarily entail additional money expenditures, which seems to be worrying the press.

To minimize the increased money expenditures the Navy Department has stated that it intends to decrease the active service period to three years and increase the reserve period proportionately.

It can not be seen how such a step will decrease expenditures, but it is clear that the reserve strength will be greatly increased thereby. And this is believed to be the real object in view, thus preparing for a possible emergency.

THE FAR EASTERN QUESTION AS RELATED TO THE INTERESTS OF THE UNITED STATES OF AMERICA.

Source: Reliable.

(14535.)

22 April, 1921.

The following notes of the above subject were submitted to this office upon request of a well-known student on far eastern affairs:

In the event of a war between Japan and the United States occurring, or threatening actually (it is threatening now in portent), a

very important element will be the attitudes and the acts of the other far eastern nationalities—China, Siberia, and Korea. All of those peoples are now strongly antagonistic to Japan, and until Japan's policy is changed or moderated they will remain hostile to her. In case of a war between Japan and any other power, those countries comprise a semicircle completely shutting off Japan from the mainland of Asia. During the next few years measures should be taken to keep the American Government fully informed of sentiments and political movements in China, Korea, and Siberia, and a plan should be formulated by the proper administrative branches of the Government (State, War, and Navy) with a view to using those people in case of a war with Japan. Cut off from the resources of the Continent, and having to withstand also the armed hostility of all her neighbors, Japan's military power against the United States would be greatly weakened. The American Government therefore should take measures as follows:

1. Keep in close touch with Chinese, Koreans, and Siberians, as to their sentiments, political tendencies, organizations, plans, etc. To do this efficiently the personnel of our diplomatic and information services in the Far East should be increased and ample funds provided for this work.

2. Maintain friendly relations as between these peoples, organizations, etc., and the United States.

3. Devise a practicable plan whereby in the event of war between America and Japan (or any other power) the Government of China can be induced to enter the war against Japan and render effective aid. This could be accomplished by the United States providing arms, ammunition, finance, and military and naval instructors. With the present political and psychological situation, it should be comparatively easy to align China on the side of America. In a collision between Japan and America, China will have all to lose from a victory of Japan. A victory of Japan would confirm her in her aggressions upon China, and open the way for untrammeled further aggressions. On the other hand, the United States, by defeating Japan, could offer China a restoration of Manchuria and Shantung and security against the menace of Japan.

4. Do the same in regard to the Siberians and Koreans. This is not to say, of course, that the American Government should intrigue against Japan in Korea. That is improper and it is not necessary. Americans had nothing to do with creating the bitter hatred of Japan that now imbues the Koreans, and they need do nothing to keep it alive. The American Government, however, should recognize the existence of this sentiment of Koreans and in case of war should make all legitimate use of it. This factor should be considered in all naval and military plans of the United States.

5. Investigate and compile complete information about propaganda carried on and maintained in the Far East by all other powers.

A skillful use of the elements indicated in the foregoing can be made by the United States to exercise a strong influence *to prevent war* by causing Japan to consider and hesitate and by placing difficulties in her way.

Certain phases of the Asiatic question tend to align the sentiments of Canadians and Australasians with the United States as against Japan. The sentiments of British resident in Japan and in China also naturally tends to align with America on these issues. Taken alone, however, those sentiments of parts of the British and of some Britishers will not be able to dictate the policy of the British Government, as has been demonstrated frequently. But it may be possible for the American Government, by proper diplomatic activities and other means, to use that British sentiment so as to bring pressure on the British Government and to prevent a mistaken policy of the British Foreign Office from developing a serious and perhaps a fatal schism between America and Great Britain on a great question of international policy. It is legitimate for the American Government to utilize this element in trying to influence the British Government in respect to the far eastern question.

In this connection, the current proposal for the Canadian Government to have its own diplomatic representatives at Washington may have significance. The strategical position of Canada vis-à-vis dispute between Great Britain and the United States has had in the past a tremendous influence in favor of America; for in the end Great Britain has been under almost decisive compulsion to yield because the geographical juxtaposition of Canada with the United States makes it impossible for Great Britain to defend Canada. Thus whatever results a war between those nations would have elsewhere, Great Britain almost surely would lose Canada, and no possible gain elsewhere at the expense of the United States would compensate for that loss. This circumstance has given the United States a tremendous leverage on Great Britain in all issues between them. The question now arises: By having separate representation at Washington, will the international status of Canada in respect to questions between the United States and Great Britain be altered? It appears, if by excluding Canada by this method from the scope of Anglo-American disputes, the British Government thereby would be relieved of the task of defending Canada and of the risk of losing Canada as a part of the Empire, that it would have much freer hand in regard to issues with the United States *in other parts of the world.* It may seem a far cry from the proposed Canadian representation at Washington to the Anglo-Japanese alliance, but there may be a definite connection established at any time, and this possi-

bility ought not to be overlooked at this juncture. At least the American Government should take all due precautions that what appears on the surface as an agreeable bond in the relations with a neighbor State does not have the effect of weakening its capacity to protect the national interests elsewhere.

Chinese evince a growing restlessness under and resentment at the practice of the powers to treat China as a diplomatic chattel by making agreements and alliances among themselves regarding China and without consulting the Chinese Government, whereby China's national possessions and rights are qualified or disposed of.

This induced the Chinese Government, in May, 1920, to formulate a memorandum (addressed, it is stated, to the British and Japanese Governments) objecting to a renewal of the Anglo-Japanese alliance relating to China without the Chinese Government being first informed and consulted. This action is significant, and it is a departure in the diplomacy of the Far East.

This action of the Peking Government was supported, in July, 1920, by a memorial jointly composed and signed by all the representative Chinese organizations, which was presented to Sir Bielby Alston, British minister to China, at Shanghai, on July 5, 1920, and which was subsequently published in Millard's Review and other papers.

This memorial set forth the objections of Chinese to a renewal of the Anglo-Japanese alliance in plain terms.

In this connection it is significant that the American Government has in the past taken the course to which China now objects (and to which China objected at the time the action was taken, viz, Minister Koo's note to the State Department dated in November, 1917, relating to the Lansing-Ishii agreement). It would be good policy in respect to American position in eastern Asia for the American Government to take the lead concerning China's point by voluntarily denouncing the Lansing-Ishii agreement on those grounds. (The agreement greatly embarrasses the American Government, anyhow.)

Furthermore, there are intimations of a diplomatic attempt further to involve the American policy in China in useless ambiguities, and to cloud it in suspicion, by making it appear that, if the Anglo-Japanese alliance is renewed, the American Government is contented with its terms, objects, and operations. It is alleged that there are taking place "consultations" between the State Department and the British and Japanese Foreign Offices on this subject; such reports have been widely published, with definite particulars of the meetings.

It should be recognized positively that nothing whatever that can be done will induce Chinese to regard the Anglo-Japanese alliance as having any other purpose, or as likely to have any other result, than to destroy the nationality and override the sovereignty of China. In

every important event since the alliance was first made, the actual operation of this alliance has been directly opposite to the terms of its statement of its objects. Under this alliance, which in the beginning guarnateed the independence of Korea, and the unimpaired sovereignty and territorial integrity of China, and the open door in China, Great Britain had connived with and acquiesced in the annexation of Korea by Japan, the virtual occupation by Japan of Manchuria and eastern Mongolia, the occupation by Japan of Shantung Province, and a general policy of Japan in China which beyond question aims at and rapidly is accomplishing the extension of complete Japanese control over China. (NOTE.—See files of British newspapers published in China and Japan.) There is absolutely no good reason to doubt that Japan's objects in securing a renewal of the alliance are to gain its support for a continuation of her policy in China and in Siberia. No student of far eastern politics will believe, if Great Britain renews the alliance with Japan, after many years of practical demonstration of what Japan's policy really is, otherwise than that the British Government is prepared to assent to a continuance of that policy and to support it morally, and perhaps with force if necessary. No matter what the phraseology of a new alliance may be, there can be no better reason to credit its objects as stated by its phraseology than to believe at this time that the real purposes of the previous and existing alliances are expressed by their phraseology.

If the Anglo-Japanese alliance is renewed, its general objects will be the same as those of the existing alliance, and which have been demonstrated by the events of the past 15 years.

But a new alliance will be different from the old one in one important respect:

Whereas the presumed antagonist to its objects in the old alliance was *Russia*, the presumed antagonist in a renewed alliance will be the *United States.*

All this is plain as the noonday sun to residents of the Far East, and to all Chinese who think in political terms. Wherefore, if the Anglo-Japanese alliance is renewed, and it is made to appear by its own statement or otherwise that the American Government approves it or is in any way satisfied with it, such attitude of the American Government will not in the least reassure Chinese about the alliance but *merely will convince them that the Japanese interpretation of the Lansing-Ishii agreement is correct, and that the American Government is in line with Japan's policy in eastern Asia.*

An immediate result of such an attitude or declaration of the American Government would be to turn the present friendly feelings of China toward America into strong suspicion and resentment. It would take perhaps a generation for American policy in China to recover from the effects of such an action. As a means to discredit

American policy utterly in the eyes of the Chinese, the inclusion somehow of the American Government, either tacitly or by definite utterance, in a renewal of an alliance of Great Britain and Japan, would perhaps be the cleverest diplomatic move that powers which desire such a result could conceive. Great care should be taken that any "conclusions" of the State Department with the Japanese and British Governments, on this or any other related questions, should not be given such a coloring. It would be a clever stroke for Japan if Chinese sentiment can be turned against America now.

JAPANESE FLEET IN 1928.

Source: Prepared by Lieut. Commander E. M. Williams, U. S. Navy.

15 May, 1921.

Comparing the Japanese and United States navies to-day on a basis of total tonnage, taking into consideration all effective vessels, the Japanese have built a total of more than 508,000 tons, while the United States more than doubles this amount, with 1,219,000 tons.

It has been customary, for several years, to base comparisons of naval strengths on total tonnage and numbers of ships, eliminating all over 20 years of age, with the exception of torpedo craft and submarines, which are eliminated when 15 years old. This forms an excellent basis of comparison, but, due to the fact that naval progress has made such rapid strides since the battle of Jutland, it is now considered best to compare strengths by post-Jutland figures, or by vessels laid down after that battle. Some capital ships, which were laid down prior to the battle of Jutland, may be considered as post-Jutland vessels, because then construction had not so far progressed that they could not be altered to embody the lessons learned from the greatest of modern naval battles.

Working from a post-Jutland standpoint, the United States has completed but one post-Jutland battleship, the *Tennessee*, of 32,300 tons, armed with twelve 14-inch guns, and but three others in the water, including the *Colorado*, launched on the 22d of this month. The latter three are the *California*, a sister ship of the *Tennessee*, and the *Maryland* and *Colorado*, each of the latter two displacing 32,600 tons and carrying eight 16-inch guns.

Japan has one post-Jutland battelship complete, the *Nagato*, displacing 33,800 tons and carrying eight 16-inch guns. The *Mutsu*, a sister ship of the *Nagato*, was launched May 31, 1920.

The United States has no ship in commission which is a match for the *Nagato*.

American Battleship Program.

The battleship building program of the United States is due for completion by the end of 1923, but may be delayed. This program is as follows:

	Displacement.	Guns.
	Tons.	
California	32,300	12 14-inch.
Colorado	32,600	8 16-inch.
Maryland	32,600	8 16-inch.
Washington	32,600	8 16-inch.
West Virginia	32,600	8 16-inch.
South Dakota	43,200	12 16-inch.
Indiana	43,200	12 16-inch.
Montana	43,200	12 16-inch.
North Carolina	43,200	12 16-inch.
Iowa	43,200	12 16-inch.
Massachusetts	43,200	12 16-inch.

Therefore by 1924 the United States will have 12 post-Jutland battleships.

In addition to the battleships, the United States capital ship program calls for 6 post-Jutland battle cruisers. These, too, may be delayed in construction. Each will displace 43,500 tons and carry eight 16-inch guns.

The Japanese eight-eight program, to be completed by 1928, calls for a fleet of 8 battleships and 8 battle cruisers, all less than 8 years old. This program is to be complete in two sections, as follows: Four battleships and four battle cruisers by 1924, the battleship *Nagato* being now complete, and four additional battleships and four additional battle cruisers to be completed by 1928. In 1924 Japan will have an eight-eight fleet, but four battleships and four battle cruisers will not be post-Jutland vessels. As the vessels to be completed between 1924 and 1928 are finished they will replace the pre-Jutland vessels now in commission so that by 1928 these pre-Jutland vessels should all be relegated to the second line. Those battleships relegated to the second line will equal the *Tennessee* and *Colorado* in gun power and probably in protection.

The first four battle cruisers of the eight-eight program are reported to have displacements of 44,000 tons. There is no doubt but that they are to be more powerful than the British *Hood;* and as the last four are not to be completed until long after the *Lexington* class, there is every reason to believe that the last four will be superior to even the *Lexingtons.*

Comparison of Navy Strengths.

The foregoing statements may be summarized in the following table:

Post-Jutland capital ships completed.

	To-day.		1924		1928	
	United States.	Japan.	United States.	Japan.	United States.	Japan.
Battleships	1	1	12	4	12	8
Battle cruisers	0	0	6	4	6	8
Total post-Jutland capital ships	1	1	18	8	18	16

All of the Japanese ships will carry 16-inch or larger guns. Two of the United States ships will carry twelve 14-inch guns each, while the remainder will carry 16-inch guns. The Japanese, in the construction of the last four battleships and battle cruisers of the eight-eight fleet, having the complete United States ships from which to learn lessons, may overstep the United States in displacements and in gun power. Therefore, the Japanese may be more nearly equal to the United States than the above figures would lead one to believe. Japan may be even stronger in 1928 than the United States.

As to Great Britian, no battleships are post-Jutland. The last battleship to be launched was the *Ramilles*, of 25,750 tons, carrying eight 15-inch guns, launched September 12, 1916. The ships of this class are not the largest of British battleships. The largest are the *Queen Elizabeth*, of 27,500 tons, which carry eight 15-inch guns. In displacement and gun power these vessels are all inferior to the latest Japanese ships.

England has one post-Jutland battle cruiser, the *Hood*, carrying eight 15-inch guns and displacing 41,200 tons.

Comparison of Three Navies.

To compare the latest battleships of the three navies now in commission:

	Length.	Beam.	Displacement.	Speed.	Main battery.
	Feet.	*Feet.*	*Tons.*	*Knots.*	
Nagato	700	95	33,800	23.5	8 16-inch (45 caliber).
Ramilles	624	89	[1] 25,750	23	8 15-inch (42 caliber).
Tennessee	624	97	32,300	21	12 14-inch (50 caliber).

[1] Over bulge the beam of the *Ramilles* is about 102 feet.

To make the same comparison of battle cruisers, the *Hood* only being in commission:

	Length.	Beam.	Displacement.	Speed.	Main battery.
	Feet.	*Feet.*	*Tons.*	*Knots.*	
Amagi	.....	.....	44,000	.....	8 16-inch.
Hood	860	104	41,200	31	8 15-inch (42 caliber).
Lexington	874	102	43,500	33.25	8 16-inch (50 caliber).

The British naval estimate for 1921–22 calls for the laying down of four capital ships. No details known here, except that they are to be improved *Hoods*.

Light Cruisers.

The characteristics of the 10 light cruisers building for the United States are as follows:

Displacement, 7,500 tons; speed, 33.7 knots; guns, 8 6-inch (50 caliber).

These 10 light cruisers are the only ones authorized, and the United States has now no light cruisers, first line. The *Salem* and her two sisters are second-line ships.

The Japanese have in commission to-day 8 light cruisers of the first line:

	Displacement.	Speed.	Guns.
	Tons.	*Knots.*	
Chikuma, Hirado, and Yahagi	4,950	27	8 6-inch.[1]
Tenriyu, Tatsuta	3,500	31	4 5.5-inch.
Kuma, Tama, Oi	5,500	33	7 5.5-inch.

[1] 50 caliber.

Building or projected, to complete by 1928, are at least 12 more, and possibly 17. These are all to be of at least the *Kuma* type, and part may be 7,000 tons or larger.

Great Britain has 45 light cruisers, first line, and 24 in the second line. She has building 4 in the first line. Two of these latter displace 4,765 tons, carry six 6-inch guns, and make 29 knots; the other two (*Hawkins* class) displace 9,750 tons, carry seven 7.5-inch guns, and make 30 knots.

Comparing the best light cruisers of the three powers, i. e., those vessels upon which there is definite information:

	Displacement.	Speed.	Guns.
	Tons.	*Knots.*	
Kuma	5,500	33	7 5.5-inch.
Hawkins	9,750	30	7 7.5-inch (50 caliber).
Omaha (United States)	7,500	33.7	8 6-inch (53 caliber).

Destroyers.

The figures given in the Public Ledger by Glenn Babb in Article VI on the United States and Japanese navies are not exactly correct. The United States has 280 destroyers, first line, completed to-day. Of these 261 have been launched since 1916. Carried as second-line destroyers are 21 boats of 742 tons each, launched between 1909 and 1912. One of the 280 first-line which when completed (probably all by the end of 1921) will bring the total destroyers, first line, to 298. Twelve other destroyers were authorized but never contracted for, and will probably not be built. One of the 280 first-line destroyers, the *Woolsey*, was recently sunk, but has not yet been officially removed from the Navy list.

According to the best information, Great Britain has 334 destroyers, first line. Some of these may have been sold, but there is no definite information. Of these 231 have been launched since 1916. Great Britain is building but 3.

The Jiji Chimpo article, stating that by 1928 the United States will have 120 destroyers less than 8 years old, is very generous if that article counts only boats launched after January 1, 1920. By the end of 1927 the United States will have but 38 destroyers launched in 1920 and after, and will have about 170 destroyers launched in 1919 and after. So far as usefulness goes, there had been very little difference between those launched in 1919 and those in 1920 and 1921.

The destroyers of 835 tons, which the Japanese class as second-class boats, meet the requirements of our own first-line destroyers. The figures given in the Public Ledger are probably correct.

Submarines.

It is true that there is a veil over the Japanese submarine construction activities. Various press reports put the number to be complete by 1928 at 120. As to types being built, or to be built, the same secrecy is maintained. There is no doubt but that the surrendered German boats will exert a great influence on Japanese construction.

To-day the United States has, completed, 58 submarines in the first line and 44 in the second line. All of the first-line submarines have been completed since 1916. Nineteen of the second-line vessels were completed after 1916. Forty-two are building and all are first-line boats. This shows that by 1928 the United States will have 98 first-line submarines, and in the second line 19 launched since 1916. Total launched since 1916 will then be 117, as compared to about 120 Japanese.

The statement of the Jiji Shimpo to the effect that the United States will not have more than 60 up-to-date undersea craft at the end of 1927 is probably based on the consideration that nothing built earlier than our present "S" class will at that time be considered up to date.

The paper is correct on this basis, for the United States has built and building 51 "S" boats, 3 "T" boats, and 3 "V" boats, making a total of 57 submarines. Such a statement as the Jiji Shimpo has made would lead one to assume that the least formidable of the Japanese submarines will at least equal a United States "S" boat. Should this be true, the United States is or would be greatly outclassed in subsea craft.

Britain Selling Submarines.

A statement was recently made in the Naval and Military Record to the effect that Great Britain has sold the whole of the "A," "B," "C," "D," "F," "S," "V," and "W" types of submarines; that the "E" class up to and including *E–22* have been sold, and that the "G" class is to be totally sold out of the service. If this statement is correct, Great Britain will have remaining 66 submarines, first line; 13 fleet submarines, first line; 3 monitor submarines, 1 cruiser submarine, 8 submarines, first line, building; 1 fleet submarine, first line, building; total, 92 submarines, not including second-line boats.

Of the ones now completed, probably but 75 have been launched since January, 1916. Out of the total number built and building, only between 50 and 60 of these vessels will be able to compete with what the Jiji Shimpo leads us to believe Japan will have in 1928.

Facilities for Building.

There are probably but four capital shipbuilding slips in Japan. However, it must be remembered that the battleship *Fuso*, of 30,600 tons, was built in a dry dock at Kure and floated out.

The statements in the Public Ledger in regard to building facilities in Japan are in general correct.

There have been rather persistent press rumors to the effect that three capital ships have been ordered by Japan from Cammell Laird & Co., Birkenhead. Immediately after such a statement a denial almost invariably appears. After one such statement, a denial was published by Admiral Okada, chief of naval construction at the Sasebo naval station, as follows:

The rumor that Japan has ordered a number of warships from England is perhaps due to the doubt regarding the shipbuilding capacity of this country in regard to the eight-battleship and eight-battle-cruiser program. People seemed to think that Japan would not be able to build all the warships required and they thus assume that orders have been placed with England. It is not impossible that we may order special ships in order to initiate ourselves into some special technique in naval construction, but we need no outside help to build ships under the eight-and-eight program. The situation would be different if the cost of construction were very low in England, but this is not the case. Japanese industries are now suffering seriously from the financial depression, and, if only for the purpose of relieving industrial difficulties, orders will not be sent to foreign countries. (Published in Japan Advertiser of Dec. 16, 1920.)

A statement in the Naval and Military Record of January 26, 1921, states in part that "a British firm has secured from the Japanese Government a contract for 7,500 tons of naval armor," but further along in the article it continues: "If the news turns out to be authentic, it will solve for the time being a very serious economic problem which is closely related to the general question of national defense. * * *"

Shortage of Steel Doubted.

The Japan Advertiser of May 26, 1919, states in substance as follows:

The greatest obstacle to the execution of the program is the shortage of materials. The state steel works at Yawata are the largest producers of shipbuilding steel, but the maximum amount of steel they can supply to the Navy is only 60,000 tons a year, while from 16,000 to 20,000 tons of steel are required for the construction of one superdreadnaught.

There are private producers of steel, but their total output is far smaller than that of the state steel works and can not meet even the tithe of the naval requirements. Indeed, not only for the construction of warships, but of ordinary merchantmen, Japan is still dependent on foreign countries for by the greater portion of shipbuilding materials needed. It is said that the naval authorities have recently ordered 20,000 tons of steel plates and sections from Great Britain and about 10,000 tons from America.

From the above statement alone, that the Yawata steel works can produce 60,000 tons of steel annually for the navy, it would appear that if the facilities of these works were turned over to the making of naval material only that, with the assistance of part of the steel production of other plants, Japan, with very little aid from abroad, would have plenty of steel to carry out her plans.

As regards the number of yards in Japan building war vessels, the Public Ledger states that six are building destroyers and that still another has the facilities for such work. This statement may conservatively be altered to eight yards actually building destroyers. Furthermore, four yards are working on capital ships, five on light cruisers, and at least three on submarines. There are probably nine yards working on warship construction, three of these being employed in the construction of capital ships, cruisers, and destroyers, and at least one on capital ships, cruisers, and submarines.

CONFERENCE IN TOKYO AND UNOFFICIAL DISCUSSION OF JAPAN'S FUTURE POLICY IN CHINA AND SIBERIA.

Source: Reliable.

(11510-H.)

23 June, 1921.

The result of the colonial conference was a victory for the military party over the Foreign Office, which means that there will be practically no change in Japan's foreign policy.

The conference was broken up, the military party holding their own conference under the direction of the Army General Staff, while the other faction continued its conference at the Foreign Office.

It was decided to enter into negotiations with the Chita government and not to evacuate Siberia.

The recent Vladivostok coup undoubtedly has direct bearing on the above decisions.

The coup was engineered by the Japanese Army, which disarmed all Bolsheviks and protected all the armed anti-Bolshevik factions.

There are several logical reasons for this move. First, to demonstrate to the Japanese the futility of withdrawing troops from Siberia. Second, to save the Army's face, in case withdrawal is finally forced, by showing that an anti-Bolshevik government has been established. Third, to play this anti-Bolshevik government against the partially Bolshevik Chita government in order to force Chita to a more favorable agreement.

The Shantung policy remains unchanged. Further efforts will be made to force China to negotiate the question directly with Japan.

The Korean and Manchurian policies remain practically unchanged. It has been decided to establish a police force along the Korean and Manchurian borders. This police force will very likely be a part of the army.

No definite steps were taken toward independent Chinese loans.

CONFERENCE IN TOKYO FOR UNOFFICIAL DISCUSSION OF JAPAN'S FUTURE POLICY IN CHINA AND SIBERIA.

Source: Reliable.

(11510-H.)

25 May, 1921.

On May 15 a conference was convened in Tokyo for the avowed purpose of discussing a revision of Japan's policy toward China. Some of the men participating in this conference are Mr. Obata; Consul General Akazuka; Governor General Saito; Mr. Mizuno; Mr. Yamagata, Governor of Kwangtung; Gen. Tachibana, commander of Siberian expeditionary force; Gen. Yuki, commandant of Tsingtau Garrison.

This conference is secret, and only a few rumors and foreign office statements are reaching the press. But the fact that such a conference has been called to discuss foreign policy is most significant, and great importance is attached to it by all the vernacular press.

The press is unanimous in commending the idea of a conference and optimistic regarding the outcome. But the Army is reported to be opposed to the conference as being unprecedented interference in military affairs, and they (the Army) criticize Gen. Tanaka for having expressed approval of it. They state that Premier Hara has called this conference to gain favor with the public, which has always wanted the withdrawal of troops from Siberia. But they state that the conference will have no power of decision and the Government will go ahead with its foreign policies, irrespective of any recommendations that may be made.

From various statements it appears that the principal subjects of discussion are to be: General revision of Chinese policy; question of policing Korean and Manchurian borders; evacuation of Siberia, exclusive of North Saghalien; conditions for retrocession of Shantung, and withdrawal of troops from Shantung; redemption of unpaid Chinese loans and loans to relief of Chinese Eastern Railway.

The two most interesting and important topics under discussion from our point of view are the evacuation of Siberia, with its attendant conditions, and the retrocession of Shantung.

The evacuation of Siberia is so closely connected with the protection of Korea and Manchuria that it will probably not be finally done until a definite Manchurian protectionist policy has been accepted, with the principal object of controlling the disaffected Koreans residing in Manchuria.

It has been suggested that the control of Manchuria be placed under the jurisdiction of the Korean Government, and this is very likely what will eventually be done. It is apparent that some agreement has been reached between the Army and the Government in regard to Siberian evacuation whereby the face of the Army will be saved. But it would seem to be a triumph of the Foreign Office over the General Staff.

As regards the withdrawal of troops from along the Shantung Railway and the retrocession of Shantung, there are numerous and divergent reports. But neither of the above proposals have been subject to much public opposition. The conference has not, however, progressed sufficiently to warrant a decision on the probable outcome of these proposals, but if it is finally decided to act favorably on them it will be done to prove sincerity to the world and to gain the confidence and good will of China. The following comment

on the Shantung question which appeared in the Yamato of May 21, 1921, is of interest:

[From Yamato, May 21, 1921.]

SHANTUNG CEDED AT LAST—MORE TRUCKLING TO A CERTAIN COUNTRY.

The Foreign Office is in favor of returning Shantung to China and of abandoning all the rights so acquired from the Germans and forfeiting all our concessions in the Province. In this manner a source of much irritation and ill-feeling of many years standing on the part of China will be removed and our relations with that country greatly improved. Minister Obata is the protagonist of this policy, which formed one of the important subjects of yesterday's conference of colonial governors at the Premier's official residence. Mr. Obata advocated the return of Shantung to China without any conditions whatever. The argument was that if this were done, China, instigated by a certain country which intends submitting the disposition of the mandate of the island of Yap to the supreme council of the Allies for reconsideration, would introduce the question of the return of the Province at the next conference of the League of Nations. In other words, it was proposed that Shantung should be given up in order to strengthen our claims to the Yap mandate. The nation is greatly chagrined that the Government is willing to sacrifice our acquired rights in Shantung in order to win its point in the Yap controversy.

JAPANESE PROPAGANDA IN THE CHINESE TSINAN JIH PAO, PUBLISHED IN TSINAN ON "THE POSSIBILITY OF WAR BETWEEN THE UNITED STATES AND JAPAN."

Source: Reliable.

(12225-C.)

11 May, 1921.

On May 5 the Tsinan Jih Pao brought to an end the series on "The Possibility of War with the United States," after it had been running for 46 consecutive days. On May 3 the paper ran the following article of this series:

THE POSSIBILITY OF WAR BETWEEN JAPAN AND THE UNITED STATES—ARE THE AMERICAN MILITARY AND NAVAL FORCES REALLY SO DREADFUL?

Our foreign affairs received a setback at the Paris conference. Up till now we have succeeded in nothing; consequently the Chinese despise us and rely on the United States. For instance, the United States should have no right to interfere in the Shantung question; yet China and the United States stand together, with the result that our Empire is now in a desperate state. The American 3 "A" policy is gradually being put into operation. It is reported that the United States has obtained a 36 years' lease of Kamchatka from the Omsk government. This concession includes all the territory south of the Gulf of Patropavlovsk and the right to build railways from the said gulf to eastern Siberia. Patropavlovsk is an ice-free harbor, and we must not neglect this matter. If the concession has really been granted, the United States will not fail to convert the harbor into a naval base. Meantime she will build a railroad over the Bering Strait, connecting Asia with Alaska. The completion of these two projects will give great effectiveness to her economic imperialism, and they will also constitute a dreadful menace to our national defenses. We must not neglect these matters which will shake the foundations of our Empire.

A glance at the map shows that this harbor is on the east coast of Kamchatka, near its southern point. If the United States should keep a strong fleet in this place, she could control the whole northern Pacific. Then there would be no place for our three fleets of eight ships to exhibit their power. All we who are subjects of the Empire should fear the United States and aim at coming to an understanding with her without thinking that we can stave off the future calamity. Anything that threatens to undermine our prestige and endangers our national foundations we shall fight against with one mind. Such a consciousness is indispensable. Our countrymen do not possess this consciousness; they would rather submit to pressure from the United States, because they think that in her present condition Japan is no match for the United States. We should inquire into the strength of the American Army and Navy in order to give the people a clear idea of whether or not they are to be dreaded.

Our people are not warlike and our country has never adopted a policy of aggression. History amply proves this. The Chino-Japanese and the Russo-Japanese wars were merely the result of Russia's southward aggression, which caused Japan to fight for her defenses. If we had not fought them our country might already have perished; if not "perished," she certainly would have been unable to attain her present position. We can see that these two wars could not have been avoided. Our higher officials, however, were not abrupt enough. They were too cautious until provoked by China and Russia. This was so because the people, with the exception of the military men, were not confident of victory.

At present the United States despises us no less than did Russia before the Russo-Japanese War. The success of the American 3 "A" policy will be as dangerous to our Empire's existence as would have been a successful policy of Russian aggression. In order to carry out her policy of capitalistic imperialism, the United States instigates China and Japan to hate each other; this is more dangerous than was Russia's far eastern policy. What, then, is the use of following in the leading strings of the United States and to respect her wishes?

PSYCHOLOGY OF THE JAPANESE PEOPLE.

Source: Reliable.

(10588—A.)

3 June, 1921.

SPIRITUAL.

(*a*) *Do Japanese people believe in the hereafter?*

Strongly. Emperor and ancestor worship. They believe the spirit is not only immortal but is also actually present with them as well as with its shrine and vitally interested in their personal affairs. (The Emperor's ancestors brought about the victory over Russia by assisting the Japanese armies.)

(*b*) *Do they believe in a spiritual life?*

Yes. They talk of man as "Bambutsu no rei" (spirit of all things); of "Yamato-dama-shii" (spirit of Japan). The belief in the spiritual life is strongly inherent.

(*c*) *Do they believe that the spirits reside in the body during life and departs at death?*

Yes.

(*d*) *Have they any real belief or theory as to the cultivation of the spirit or soul?*

Yes. Witness the various religions in Japan, including Shinto (or the way of the gods) and books on ethics.

(*e*) *Do they believe that the soul is judged by the deeds of the person on this earth?*

Yes. This belief is indigenous to their old religion.

(*f*) *Do they believe that evil acts affect the soul or spirit?*

Yes. By moral habit the soul becomes either a demon or a god.

(*g*) *Do they affirm the trinity in humanity?*

Yes. They have words for the tripartite nature of man.

(*h*) *Do they believe in reincarnation?*

The Buddhists, yes; others, no.

(*i*) *What are the principal affirmative beliefs in their spiritual philosophy?*

Group of beliefs in a special spiritual endowment of the Japanese people as the descendants of the gods; in their Emperor and imperial family as the present heads of the divine race and a preeminent destiny for their people in virtue of these facts, and a belief in the absolute oneness of the Japanese race as one family, with the Emperor as head.

(*j*) *What do they maintain as ideals?*

Group ideals—the glory of their country and Bushido. Individual ideal—loyalty to the Emperor and patriotism (this equals "Yamato-dama-shii" or spirit of Japan).

(*k*) *Are these people or any large class of them fetishists?*

Generally speaking, no. Modern education has lifted them in the past 50 years or so above earlier delusions of this sort.

(*l*) *What forms of fetishism are met with?*

Slight forms are found, as in the use of "Gohei," or instruments used in exorcism.

(*m*) *What things in regard to the spirit do they deny positively to be true?*

Their ideas on matters of the spirit are too embryonic to have become positive in denial of any positive truths. They deny nothing in regard to the spirit.

SUPERSTITION.

(*a*) *Give some examples of spiritual superstition, ghosts, werewolves, vampires, miracles, etc.?*

The commonest are the ideas that multitudes among the lower classes have of fox, badger, cat, or demon possession. Cruelties to the demented, epileptic, deaf and dumb, etc., sometimes practiced in their attempt to exercise these supposed intruders. Miracles of healing believed in; crutches, etc., left at temples; human hair given by women who have had their prayers answered. Kamakura, near Yokohama, the scene of a supposed withdrawing of the sea for the

benefit of his army when a general of olden time threw his sword into it, reminding one of the tradition of Moses and the Red Sea.

(*b*) *Is there any reason that you or any other authority can assign for these superstitions?*

Only the natural universal reason of the credulous working of the imagination in the childhood of individuals and races.

FALSITY.

(*a*) *What doctrines of any spiritual philosophies do these people claim or affirm to be false?*

Eternal damnation. Extinction (conditional immortality).

(*b*) *What do they deny to be false spiritual philosophy?*

Nonabsorption into Deity.

(*c*) *Do they personify falsity by a belief in a devil and in demonology? Discuss briefly.*

They believe in gods and demons innumerable.

REACTIONS.

(*a*) *What characteristics may be attributed to the philosophy outlined in your answers?*

Belief in the divinity of the Emperor. Belief in the immortality of the soul. Belief in the future purification of the soul. Belief in personal identity in contradiction to absorption into Deity.

(*b*) *What other characteristics have the people which may be charged to their spiritual philosophy? Give the tenets to which they are attributable.*

Very great loyalty to Emperor, patriotism toward Empire; tenets found in Shintoism. Also suppression of the individual; communalism; formalism; lack of individual initiative; spontaneity or voluntariness. On the positive side, great ability to coalesce and move together when given a start.

SENSUAL.

(*a*) *Are the people fond of dress, show, eating, drinking intoxicating liquor, dissipation, music, art, etc.?*

They are fond of dress, but in a dignified, modest, moderate way. As for eating and drinking, they have been through the centuries abstemious on the whole. They have been poor and living under surveillance and coercion, from which they are now breaking loose with evil results in social habits. Sexual immorality has always been common, but in family life on the part of the women held in check by the above facts, oppression and surveillance. The geisha and the general licensed system have been evolved in trying to keep family life unsullied.

(*b*) *Do they carry their fondness for the above to excess?*

(As above.)

(*c*) *What are their ideas in regard to the part that amusement or gratification of the senses should take in their life?*

In general, they regard amusement, sensual gratification, etc., as natural expressions of human life. There is little positive virtue in these matters. Group unhappiness, the family, village, or state, results from excesses, and for this reason mainly there have been attempts at restraint. But all is changing, and a hybrid individualistic philosophy of life is getting the uppermost with the Japanese to-day.

(*d*) *Do they believe that the whole of existence lies in the things which are perceived through the senses?*

No.

(*e*) *Do they believe that the main idea in life is pleasure?*

No.

(*f*) *What do they claim is true in regard to the above?*

(Answered under "Sensual (*c*)."

SCIENTIFIC.

Truth (Affirmed—Denied).

(*a*) *Are these people agnostics or atheists or deists?*

The large majority and the educated classes think nothing at all about religion; they are agnostics. It does not enter into their lives; they are "nothingists." Many of them live a moral life, practicing Confucianism. They are ancestor worshippers; not religionists. The Buddhists are Pantheists.

(*b*) *Are they given to thought on the theory of the universe?*

No.

(*c*) *What do they believe in this respect?*

They have no belief.

(*d*) *What do they claim as true?*

They make no claim.

(*e*) *In discussing this subject, give the system of philosophy they assert is true or follow; that is, whether it is called "Western Science," Buddhist, Astrology, Chinese, or Indian Medicine, etc.?*

Buddhist and Chinese philosophy.

(*f*) *Do they practice or preach any such doctrines as socialism, communism, anarchy, etc.?*

No, they are forbidden.

(*g*) *What duties do they owe to the state?*

Loyalty, reverence, obedience, self-sacrifice, and military service.

(*h*) *What does the state owe them?*

Fatherly protection.

Speculation (Affirmed—Denied).

(*a*) *Does their speculation follow logical lines from cause to effect or from effect to cause, as in "Western Science," or does it combine fact with fancy?*

They do not speculate. They are determinists (fatalists).

(*b*) *Is their cosmography based on astronomy or fable and mythology?*

Based on mythology, as found in the book "Kojiki."

(*c*) *What is their story of the flood and the origin of humanity?*

No story of flood. Cosmogomy of the "Kojiki."

(*d*) *In practically every race or nation of consequence there are some people who have received a western education; also, as in China, there is sometimes a native intelligencia, and in addition the priesthood. The teachings of these do not always agree and the people more likely to follow the science of the priesthood. Consider this, as it is desired to know what each large body believes and teaches—two quite different things sometimes.*

Foreign educated go with Europe and America. All others follow Shinto mythology.

(*e*) *What characteristics may be attributed to the philosophy outlined in your answers and what other characteristics have the people which may be charged to their scientific philosophy?*

The mythological philosophy teaches that the Emperor is ruler, teacher, and father. The characters of the second part follow throughout the teachings obtained from scientific America and Europe.

Religion (Concepts).

(*a*) *What is their nominal religion?*

Shintoism (ancestor worship, divinity of the Emperor) and Buddhism.

(*b*) *What is their idea of God?*

Divinity of the Emperor and virtue of their gods, each conferring special benefits (gods of Mercy, Healing, Thunder, etc.).

(*c*) *What are his attributes?*

According to the particular virtue of each individual god.

(*d*) *What does their religion teach as right? Unusual examples as compared with the Christian religion in the United States?*

Anything that benefits the state.

(*e*) *What relations between men are enjoined?*

All united in loyalty to the Emperor, collectively and individually.

(*f*) *How far does their religion go into their daily life?*

Not greatly in a visible way.

(*g*) *What does their religion forbid as wrong?*

Anything that injures the state.

(*h*) *How strong is the hold of their religion on these people?*

A vital force.

(*i*) *Do they cling to it in spite of adverse circumstances?*

So far as the past shows, yes; but adversity might destroy it.

Expression (Deeds—Words—Ritual).

(*a*) *Do these people live up to the teachings of their religion?*

Fairly well.

(*b*) *How far? Do they have to be coerced by priests?*

As far as other religionists. No coercion necessary. Influence of priests is practically nil.

(*c*) *Does it go deeply into the daily life?*

Not very.

(*d*) *Do they talk about it much among themselves?*

No.

(*e*) *How closely are their acts related to their words in regard to religious matters?*

They do not talk about religious matters.

(*f*) *Is there a state religion?*

Yes. Shintoism (ancestor worship).

(*g*) *Are other religions tolerated?*

Yes. All religions are free.

(*h*) *Is there any or much feeling against people who practice other religions?*

None.

(*i*) *Is this feeling due to any particular teaching of the religion itself; is it fanned by the priests or politicians?*

No feeling against other religions.

(*j*) *At what age is the religious teaching of children begun?*

From the beginning of schooling.

(*k*) *By whom is it given, and how is it taught?*

School-teachers from textbooks.

(*l*) *What is the status of the priesthood?*

No special status. Attached to shrines and temples.

(*m*) *Are the men less religious than the women?*

No; about the same.

(*n*) *Give some examples of what the majority of the people hold that their religion teaches as right and wrong.*

Emperor worship and patriotism are right; the opposite, wrong.

(*o*) *Do these people live up to the teachings of their religions?*

Yes.

(*p*) *Is there a real religious thought or is the religion merely the acceptance of dogma?*

No real religious thought. Merely acceptance of dogma.

(*q*) *Do the people understand the significance of the symbolism of the ritual?*

Yes.

(*r*) *How deeply into their daily life do they carry their religion?*

They carry it lightly; not deeply.

(*s*) *In general, discuss the religion of these people from the point of view as to whether or not there is any effort on the part of the people to live up to their religious teaching; that is, whether or not they practice what they preach.*

Religion, as referred to in these pages, means belief in the divinity of the Emperor, which manifests itself in ancestor worship with all its variations.

Emotion (Concepts—Right and Wrong).

(*a*) *Have these people the quality of pity?*

Not to any great extent.

(*b*) *Are they just?*

No; they are partial.

(*c*) *Are they honest?*

Out of the commercial world, fairly so.

(*d*) *What is their code of honor?*

Bushido, the Japanese code of chivalry.

(*e*) *Are they merciful?*

No; they are merciless in general.

(*f*) *What do they think of woman and her place? From the emotional point of view?*

Her place is in the home; motherhood.

(*g*) *Are they patriotic?*

Yes; very.

(*h*) *Are they cruel?*

Yes.

(*i*) *Are they given to luxury?*

Where they can afford it.

(*j*) *Are they extravagant?*

No; only the newly become rich.

(*k*) *What are their ideas on patriotism?*

The highest possible.

(*l*) *On family pride?*

Very high.

(*m*) *Are they proud?*

Intensely so.

Ethics (Private Morals—Public Morals—Hypocrisy).

(*a*) *Do these people have one code of morals for private use and another for public?*

Yes.

(*b*) *Give some examples of the difference between their private code and their publicly expressed code.*

Concubinage.

(c) Is hypocrisy prevalent? If you can explain the particular reason, do so briefly.

Terribly so. The desire to appear well in the eyes of society.

EXPRESSION.

Fun and Amusement.

(a) Give some of the social customs of these people. How is a visit carried on? What do they do when they meet? How do they greet each other? Give some of their games. How do they amuse themselves at social gatherings, and do they have fairs? What do they like at the moving pictures; at the theaters; at musicales? Do they have any gatherings such as the church social in America? Lawn parties? Do they have many shrines? Are any miraculous qualities claimed? Do they visit these shrines? For what purpose? Are any localities considered sacred? Do they visit these? If so, singly or in parties? Any resorts? If so, note and describe briefly what the amusements are.

All visits are carried on very ceremoniously. A gentleman calling does not enter the house when the master is absent. Ladies visit only ladies. Exchange the ordinary conversational courtesies respecting health and weather (meeting).

They greet each other with the customary bows on their knees on the matting, if in a Japanese house. If in a foreign-built room they bow standing.

Girl children play battledore and shuttlecock. The boys fly kites and spin tops. They play a good deal of baseball and a little football.

A dinner is long drawn out, with much conversation. After dinner the men sing their songs and women play various musical instruments. Both men and women smoke. They also play cards a great deal. Charades are popular.

Fairs are held after the American and European fashion, even to charity bazars.

The Christians have church socials: the Buddhists and Shintoists do not.

The Japanese also hold lawn parties.

They have numerous shrines, all of which are supposed to have a low order of miraculous virtue. They visit them often, for ancestor worship and general spiritual requests. There are sacred localities which are visited both singly and in parties. There are many pilgrimages to noted shrines.

In every large city or town are public gardens in which are tea houses, merry-go-rounds, shoot-the-chutes, archery, rifle and pistol galleries, singlesticks, jiu-jitsu, wrestling, tennis, etc. In almost every village in Hokkaido they have horse racing once a year. Also "no dance," an historical drama. They like the same class of moving pictures that are current in Europe and America, "Quo Vadis" being

especially popular. At the theaters they like historic drama and ancient legends.

At musicales and concerts they are very fond of European and American music and in some instances they like to insert here and there a piece of Japanese music, such as the harp, the flute, the "biwa" or small drum, and other native instruments.

(*b*) *Are these people given to singing?*

Yes; especially the men; singing old Japanese historical songs called "Utai."

(*c*) *Has native music reached a high state of development? Give a short discussion on the above, and in addition discuss the place art has in their lives.*

The Japanese people are musical and music loving. The girls are not now taught as much native music as formerly, but are taught more and more on European lines. Their whole life is artistic. The tea ceremony, the viewing of flowers, the landscape gardening, the various flower shows, the wonderful and artistic patterns on their dresses, the picture scrolls in their houses, the designs on their books and furniture, the study of flower arrangement.

(*d*) *Have they any such cults as the worship of the beautiful in nature, or in the works of man?*

No such cults as nature worship and the worship of the works of man.

(*e*) *To what extent do they indulge in the dance?*

They do not indulge in private dances. What dancing there is is public; i. e., the "no dance" and the "geisha" dancing in the tea houses. Professional dancers are sometimes employed in private entertainments.

(*f*) *What part does sport have in their lives? Compare with English and American.*

Sport has comparatively little place in their lives.

(*g*) *Discuss their architecture. Is it native, copied, or adapted? If not native, note the native influence on the copy.*

Their temple architecture is borrowed Chinese. The public buildings are European and American. The dwellings of the well to do are foreign architecture, with some native rooms, or native house with one or two foreign rooms. The average Japanese lives in a purely native house, very lightly built, with sliding paper doors and sliding wooden weather shutters.

(*h*) *Do they indulge in extravagance in dress?*

They do not indulge in extravagance in dress.

(*i*) *What about jewelry?*

They do not use much jewelry, but use many ornaments for the hair. But nowadays those that can afford to are beginning to indulge

in jewelry—gold and silver rings, necklaces, chains, bracelets, pearls, diamonds, and various precious stones.

(*j*) *What about customs in eating and drinking?*

The upper classes have their meals together (men and women); in the middle class the men have their meals first, being waited on by the women, who eat afterwards. The servants eat after their employers have finished, eating the left-over food. In the lower classes the men and women eat and drink together.

(*k*) *What about social formalities?*

Social formalities and etiquette are very strictly observed.

(*l*) *Do these people mutilate their persons by any such customs as Chinese foot binding, slashing of the face as done by certain African tribes, self-torture, as in certain practices of the North American Indian, etc.?*

No.

(*m*) *Do they have any custom similar to that of the Spartans in exposing sickly children to the elements?*

No.

(*n*) *Do they indulge in orgies or other practices where hysteria is developed in a crowd?*

No; except in the practice of tenrikyo, and recently Omoto-kyo.

(*o*) *Do they have any strange cult, such as Satanism, where in the rites they indulge in sexual promiscuity?*

No.

(*p*) *Are they monogamous, polyandrous, or bigamous?*

They are openly monogamous, but in secret concubinage is practiced very largely.

(*q*) *Give some representative examples of their important natural practices, if not mentioned in above discussion.*

Natural practices covered in above answers. Under unnatural practices, Phallism.

(*r*) *Are these people given to dissipation? What form does it take?*

Largely so. Prostitution.

ETHICS.

(*a*) *Considering ethics as their rules of conduct and morals, how does their private code coincide with their public code? If there is any variance, is it understood and winked at by the people?*

Their social ethics, consisting of the analects of Confucius, in theory are well kept, but in practice not so well.

(*b*) *Are they hypocritical; that is, do they profess to have a higher character and code of ethics than they really have? Particularly with a desire to fool others than themselves?*

They are hypocritical.

(c) *Are they hypocritical as a nation, or as individuals, and is it to such an extent as to be a marked characteristic?*

Both individually and as a nation. Yes; hypocrisy is a marked characteristic.

PERCEPTION.

Concepts.

(a) *Under this heading discuss these people from the point of view of their ability to see and to reason as distinguished from their emotions. Many of the concepts mentioned above may be perceptive if they are due to reason and not to emotion. Thus honesty may be due not only to the emotional objection to besmirching one's character as a reaction to teaching and traditional honor, or else to the precept that "Honesty is the best policy." Therefore, in discussing perceptive concepts of right and wrong, observe what the moral and ethical code is, and in such cases where it is not due to religion or emotion it should be placed here.*

They are a highly metaphysical race, of exceptional intellectual keenness and ability in argument. Emotionally they are highly hysterical.

Neutral Concepts.

(a) *Under this heading discuss some of the philosophy of these people dealing with subjects other than rules of conduct, such as a continuation of their speculative philosophy and the precept or thing known as right or wrong or neutral.*

Their rules of conduct are governed by a mild form of fatalism; by a highly developed sense of utilitarianism; their sense of right and wrong is largely a matter of education. They are opportunists. Principle, in the Anglo-Saxon sense, is as yet beyond them.

Expression.

(a) *Logic is the science of the processes of inference. It is that mental operation which proceeds by combining two premises so as to cause a consequent conclusion. Have these people the faculty of coming to logical conclusions in their reasoning? Give some examples both of their logic and of their lack of logic in certain instances, and discuss them from this point of view.*

Yes. Example of Japanese logic and reasoning: Might is right. Everything which goes contrary to Japanese ideas of right must be put out. The Queen of Korea went contrary to what the Japanese considered to be right. Therefore she was assassinated.

Inquisitiveness.

(a) *Are these people satisfied to take things as they are without any investigations?*

By no means.

(b) *Are they of an inquiring turn of mind in the sciences, etc.?*

Yes.

(*c*) *Are they carelessly inquisitive or does their inquisitiveness result in organized search for truth?*

Their inquisitiveness is an organized one for the search after truth and the reason of things. (As a national trait, inquisitiveness is innate.)

(*d*) *Are they meddlesome? Do they mind their own business?*

They are very meddlesome and attend to everybody's business but their own.

(*e*) *Are these people efficient; i. e., do they accomplish the maximum with the minimum of effort and expense in time, money, men, or material?*

No; they are inefficient—wasteful of time and effort.

(*f*) *Do these people waste natural products, physical energy, work, time?*

They waste physical energy, work, and time.

(*g*) *Do they dissipate their energies in fruitless talk, or in jumping from one thing to another?*

Yes; markedly so.

Ethics.

(*a*) *Give some examples of the prejudices of these people.*

They are prejudiced against all European authority or direction. They have strong prejudices against the aboriginal races under their control. Examples: Korea, Formosa, and the Ainu.

(*b*) *Are they narrow-minded?*

Very narrow-minded.

(*c*) *Are they prejudiced against foreigners?*

Secretly, very much so.

(*d*) *Are they subject to religious prejudices?*

No.

(*e*) *Are they tolerant with people who run counter to their prejudices?*

Inwardly, no.

(*f*) *Are they tolerant of the ideas of people who differ from them? Give examples and discuss.*

No. Constantly occurring strikes in schools against teachers.

(*g*) *Are they intemperate in drink, eating, play, or work?*

In eating, drinking, and play they are becoming intemperate. When working for themselves (farmers and men who work in their own homes at their own trade) they are industrious and hard working, from dawn to darkness, enlisting the willing assistance of the whole family. When working for other Japanese they are more and more given to sabotage, which they practice as slowing down, doing barely enough work to avoid discharge. When working for foreigners they do as little as possible, and waste time in every way.

UNITED STATES-JAPANESE RELATIONS.

Source: Belgium Newspapers.

(14629.)

La Derniere Heure, May 31, reporting an interview with two distinguished Japanese now in Belgium, Dr. Mikami, of the University of Tokyo, and Dr. Okamatsu, of the University of Kyoto, on the eve of the visit of the Japanese crown prince, prints the following statements relative to the Japanese-United States affairs. After indicating the great sympathy felt in Japan for the Entente countries and for Belgium in particular, it was added that the feeling against Germany was not, however, so bitter as in Europe, and further that under no circumstances would Japan enter into relations with bolshevik Russia headed by Lenine.

The only question really vital, "it was suggested," is the matter of the island of Yap. The response was as follows:

As a matter of fact, America is in the same position with respect to France and England as she is relative to Japan; but for us there is the question of the island of Yap, which gives a degree of variance between the two countries. The projected entente for the Pacific is agreeable to the Japanese, but is it equally so for the United States? That is the question. We have the conviction that we are very patient. Prior to the Japanese war we were patient for two years.

But everything has its limits. Belgium, too, thought only of peace. She was not armed; under menace she united against the invader. As we said a short while ago, our sympathy for the Belgians arises from the fact that we are similarly placed. A recent telegram from New York says that the response of the Japanese Government has been satisfactory. But if our Government has tried to satisfy the United States it is none the less the fact that the nation does not support it. The Russo-Japanese war was preceded by concession during 10 years.

Is there a question of armament in Japan?

Everything depends upon eventualities. If it is necessary we shall try to have enough arms to defend ourselves; but never have we carried on an aggressive war. At the time of the Chinese-Japanese war we were not even prepared.

Certain Americans ascribe warlike sentiments to us. That is an error. We have always been on the defensive. Before those two wars hostilities were unknown to us for 2,000 years. If Americans imagine that we are bellicose because we have extended our territories subsequent to wars, we reply that they founded their Nation 150 years ago and that it was as a result of wars that they conquered the Philippines, Hawaii, etc.

At the same time we can add that if the crisis becomes acute we are sure that America and Japan will try to avoid going to war.

Le XXe Siecle, June 1, continuing its series on the "Conflict in the Pacific" by Saint-Marc, points out the dangers confronting the British colonies and dominions in the Japanese menace and notes the statement of Paul le Faivre to the effect that the dominions would seem to have found significant support in the American political world, notably in Senator Lodge, in preparing a concerted system of defense against the yellow races. Mr. Hughes, Prime Minister of Australia, is said to have recently declared that Australia hailed with delight

every warship placed in the docks of the United States, and certain journals are intimating that an entente based upon mutual cooperation between Canada and the United States against a common enemy has been established.

The complexity of the problem is evident, and it would seem as though the United States and Japan in their quest of amicable settlements were trying to deceive themselves as to the fatality which is forcing them into the arena unless they are employing juridical controversies to amuse the crowd while they are making ready in the wings with more formidable weapons.

Japan has placed in England for her squadron nearly 100,000,000 pounds in orders, and there is no need to recall the extravagant plans of the Secretary of the United States Navy, Mr. Daniels, to procure for his Nation the premier fleet of the world. The proposition which circulates between Tokyo, Washington, and London for disarmament, for reducing the naval construction program by 50 per cent, would seem to be nothing else than the most menacing realities.

The question of the Anglo-Japanese alliance established by a treaty which is shortly to be renewed gives rise to many conjectures. As it now stands, with the reserves subsequently added, this alliance could not entail the combined action of the two contracting parties against the United States. But will Japan allow the dominions to be hereafter at liberty to form coalition against her? And if these offshoots of Great Britain act on their own account, will the latter refrain from aiding them in case of need? One of the objects of the Anglo-Japanese alliance was to provide, in certain eventualities, for Japanese cooperation in preserving British rights in India. It is not rash to predict that if Japan were to enter a conflict against a white race, for a question of race, this conflict would be the signal for a popular uprising of almost incalculable effect against all the European powers established in Asia. It may even be questioned whether the 15,000,000 of Negroes of the Southern States of the United States would remain indifferent to the revolt of the subject races.

The increasing menace of such a conflict, with its certain repercussions upon the foreign possessions of the greater part of the Great Powers, will bring about, quite probably, a substantial readjustment of the existing treaty, in case it is renewed, between the United Kingdom and Japan. Were it possible to limit the problem to the two nations primarily interested, America and Japan, the solution would seem to be neither direct nor easy. Could the United States, without losing her premier position among American States, without entailing a series of economic and social troubles, without possibly provoking a secession of the West and at all events compromising their status as a great Caucasian nation, could it raise the barrier to the inflow of

yellow blood? And Japan? After three great and victorious wars against the greatest empires of the world—China, Russia, and Germany—after having sat in the councils at Versailles among the five great world powers, can it, with the eyes of Asia upon it awaiting the critical turning point of July 17, 1923, can it by a subterfuge divest itself of the mission it assumes of being the standard bearer of the emancipated yellow race?

Thus, according to M. Paul le Faivre, the British policy of material interests is in conflict with a policy of ideals and sentiments. This was bound to happen. History records that it has often happened and that it is always the ideal that triumphs over interest. France and Belgium fought from 1914 to 1918 in the name and moral principles, fought the colossal empire founded by Bismarck on the basis of the most brutal interest. They conquered. This example, among thousands of others, is too recent to be forgotten by the world in 1921.

JAPANESE SCHEME TO KEEP SHANTUNG POWER.

Source: Chinese Press.

7 July, 1921.

Even if China should consent to Japan's terms, Shantung will remain virtually a Japanese Province, for acceptance of the terms paves the way for even greater advantages to Japan through the extension of the Shantung Railway across the fertile plain from Tsingtao to the richer Shansi Province, where lie vast stores comprising Japan's greatest needs, namely, iron, wool, and cotton.

Japan controls all the trade in Shantung through the splendid Tsingtao port, and after seven years' occupation it has made its position so strong that it will be impossible to dislodge it except through pressure from some stronger power. However, if Japan is permitted to remain much longer, it need have no fear.

Japanese terms.—Taking advantage of China's helplessness, Japan has steadily been driving nails into Peking's coffin. The Japanese terms, as given your correspondent by Maj. Gen. Yui, military governor of Kiachow, during the course of an hour's interview, follow:

Japan expects from China in exchange for Shantung, first, the establishment of a police organization guaranteeing the safety of foreigners and foreign interests; second, a decision as to whether Tsingtao will be an open treaty or international port; third, Anglo-Japanese management of the Shantung Railway, and a like management of the mineral rights. When China agrees to a conference the first two questions will be foremost; then we shall be willing to take up the railway question.

Not only Germany but Japan has invested heavily to make this an important port and a beautiful city. We can not return it except under condition that it be maintained as now, and that its security be guaranteed. Minor questions involve whether the harbor will be attached to the railway, and also the disposition of eight squares

of land, partly in the city, upon which Japan has erected many factories at a cost of millions of yen.

Ready to confer.—China wishes to recover Shantung for herself exclusively, but this is impossible. We are ready to confer whenever China asks. While China hesitates, we are continuing to develop business here, so China is losing by every day's delay. We are working not only for China's interests, but also for the Japanese, who have invested 150,000,000 yen in Shantung since the occupation. We have taken nothing from China, while investing heavily. It will be necessary to settle the financial questions when negotiations are taken up. The longer China persists in a refusal for a direct conference, the more she will lose.

This is perhaps the frankest statement ever made concerning Shantung, and it reveals Japan's purpose of controlling the Province permanently, for the correspondent was assured in Peking a few days before coming to Tsingtao that China was not willing to treat with Japan regarding a withdrawal, knowing the terms would be beyond the power of the tottering government to accept.

Fate seems sealed.—Already the Japanese name Santo is being applied to the Province, and it appears on some railway passenger cars. All the streets bear Japanese names, and there is every indication that the Province is a permanent Japanese possession.

JAPAN IS WILLING TO COMPROMISE ON YAP QUESTION.

Source: Reliable.

(13448-A.)

23 June, 1921.

There has been practically no public discussion of the Yap question for the past month, but there are indications that Japan is now rather anxious to negotiate the question directly with the United States and willing to make the following compromise:

(1) Japan shall control the Yap-Shanghai cable.
(2) America shall control the Yap-Guam cable.
(3) The Netherlands shall control the Yap-Menado cable.
(4) Cables may be landed freely on Yap Island.
(5) Japan's mandate over Yap shall be recognized.

Japan will, however, oppose to the end any steps to take the mandate of the island from her.

The reason for the present desire to negotiate directly with the United States is the fear that through informal negotiations with England, France, and Italy, the United States has been assured of decisions by the above countries to act favorably to the United States.

THE NAVAL WAR, 1914-1918, NORTH SEA. (FROM THE GERMAN NAVAL STAFF HISTORY.)

[The first installment of this translation appeared in the Monthly Information Bulletin of 15 January, 1921.]

Chapter 5 (concluded).

The *Strassburg*, standing in the Outer Jade at 10.34 a. m., at first on a course west-northwest, went around square 139 W., in which enemy U-boats had been reported. After the ship, without mishap, had passed through a sector which immediately thereafter was erroneously reported as mine suspicious by the torpedo-boat flotilla, there came in sight at 11.55 o'clock at 60° to starboard 2 cruisers, with 10 to 12 destroyers. Four of these at once hastened to attack, favored by the slight range of vision of about 90 hm., and fired torpedoes after coming in sight, so that the *Strassburg*, in order not to be hit, was obliged to turn to port. At the same time fire was opened on the forward cruiser and was answered by both cruisers. On the third covering salvo there arose three dark-brown smoke columns from the after portion of the ship which were almost as high as the masts. The English cruiser turned off on a northern course and ran behind its destroyers. The brief engagement had taken place at distances of 68 to 84 hm. and had to be stopped as it was not possible to observe any longer. The commander of the *Strassburg*, Commander Retzmann, was, however, not inclined to give up contact with the enemy, and putting the helm to port turned in behind the destroyers. Ten minutes later these came in sight again off the port bow at 80 hm. The same game was repeated a second time; the *Strassburg* gave way to starboard before the torpedo attack and at the same time she opened fire on the destroyers at 54 and 78 hm., while the small cruisers, this time standing behind the destroyers, were barely discernible in the mist. An enemy torpedo passed on the port side in the direction of the course, a second passed abaft the stern, then under heavy artillery fire the destroyers again passed out of sight astern. During the attack different destroyers were distinctly discernible, from which it followed that more than one flotilla must have participated in the invasion. The commander now resolved to drive the forces sighted toward the supposedly further westward *Mainz*. In this intention which perhaps might have favored a very successful cooperation with the *Mainz*, or even the rescue of that ship, the *Strassburg* was unfortunately hindered by the fact that at 12.27 noon new forces suddenly emerged on the starboard side. These engagements drew the ship farther and farther north. Almost at the same time the *Mainz* came up from the west to the *Arethusa*, for that was the ship with which the *Strassburg* had fought only a short time before.

The order to sail had found the *Mainz*, because of the preceding radio messages of the first Torpedo-boat Flotilla concerning the attack on the outpost line by light English forces, all clear with steam in all boilers toward 10 a. m., on the Ems. Therefore the *Mainz* was able to immediately weigh anchor and was soon under way at top speed.

On the Ems there was by way of high-sea forces also the third Torpedo-boat Flotilla, of which, however, only six boats lay in Borkum Roadstead at this time; other four, among them the flotilla leader, had gone to Emden at 5.45 a. m. for coal. As for the boats in Borkum Roadstead the chief of the sixth Torpedo-boat Flotilla, Lieut. Theodor Riedel, had, on the basis of the incoming radios, given orders at 8.40 o'clock to have the turbines ready and the oil boilers heated. Then when the *Mainz* received the radio order to sail the half-flotilla commander asked the commander of the cruiser if he ought to follow with the boats, but he was ordered to stay behind, as the flotilla was to protect the Ems. Two boats, *G 169* and *G 172*, immediately sailed to guard the outer entrances. The further events on the *Mainz* were described by the then first officer of the ships, Lieut. Tholens, as follows:

The course was at first northward, so as to obtain as good a chance as possible of cutting off the retreat of the enemy vessels. The airplane at the disposal of the ship in Borkum was sent in the same direction. The weather was calm when they sailed from the Ems, the air clear and bright. The reconnoissance conditions appeared to be quite favorable for the airplane. Also in regard to our own possibilities of retreat after further advances, information was to be expected. The airplane, however, returned without result after a short time.

The first more definite information as to the position of the enemy forces the *Mainz* got from the *Stettin* and *Frauenlob* and later from the *Strassburg*. The reports of the *Strassburg* concerning the engagement with enemy destroyers and later also small cruisers made a participation in this battle by continuing the northern course seem possible. At the same time radio messages from the *Cöln*, which was trying to keep the same battle position in the southeast, were received. From a radiogram of the *Strassburg* shortly before 12 noon the coming in sight of the enemy quite exactly toward 12.30 o'clock noon could finally be expected. This was made known to the crew.

Meanwhile the *Mainz* had gotten into hazy weather. This made surprise by stronger enemy forces possible. This fear could, however, now have no influence any longer on immediate plans.

From the preceding remark in the report it follows indubitably that on board the *Mainz* the possibility of a surprise by stronger enemy forces was considered. It was also known that several enemy cruisers were to be expected. The quick further advance was undertaken entirely on the responsibility of the commander. However, the latter acted correctly throughout, as the way back lay open to him. That later an unfortunate steering trouble was to lead to the loss of the ship he could not and ought not to have taken into

account, for otherwise every offensive action at sea would be impossible from the start. Here it is for the first time in this war distinctly shown how dependent the seamen is on apparently unimportant troubles in material and no reproach for a too hasty advance should be subsequently construed.

The report continues as follows:

At 12.30 p. m. the *Arethusa* and eight destroyers came in sight from the northeast, only 6 nautical miles west of their position in the second fight with the *Strassburg*. Scarcely a quarter of an hour after this fight they had turned on a western course. The visibility had decreased in the meantime. So as to take the enemy under fire with the starboard guns, a course to port north-northwest was steered. Shortly after the first salvos, which the enemy vessels replied to with independent fire, the opponent went off in groups on a northern course. The firing conditions were extremely unfavorable as the enemy vessels in the hazy air were very indistinct. Nevertheless, several well-placed salvos with certain hits were observed. One of these on the bridge, as was afterwards ascertained, put the entire personnel, including the commander, out of action. The *Mainz* went slowly, so as not to lose sight of the enemy, on a northern course.

At 12.45 noon masses of smoke to the northwest were reported and a few minutes later three cruisers were made out. The *Mainz* had immediately turned hard a-starboard. While still turning, however, the salvos of these opponents were striking in the vicinity, and a little later the *Mainz* received the first hit on the works and middle deck. The fire of the *Arethusa* and the destroyers, which now had almost gone out of sight, had been without any result. Our fire was now exclusively directed toward the new opponents. At the same time these were reported by radio. At 12.55 p. m., however, the enemy cruisers were only recognizable by the flashes of their guns. Shortly thereafter these, too, stopped and with it the falling of enemy shells. The *Mainz* ran 25 nautical miles, course about south-southwest, to the *Osterems*, and developed heavy smoke.

Meanqwile off the port quarter another cruiser (in reality it was the *Fearless*), and somewhat ahead of six destroyers in close formation, came in sight. In the fight now developing with these, several torpedoes were fired at the *Mainz*. Suddenly, at 1 o'clock, the rudder became jammed over 10° to starboard. The measures hereupon taken to restore the steering power, although the entire steering plant in the ship was in order, remained without success. It is therefore to be assumed that by an underwater hit a bending of the entire rudder to starboard occurred. The port engine was stopped. The *Mainz* turned slowly to starboard.

At the same time came the report to the bridge that three guns, with their crews, were completely out of action. As a consequence of the inability of the ship to maneuver now once more, the three cruisers, as well as the *Arethusa* and eight destroyers, had a chance to participate in the fight. In it the ship was opposed by a superior force of not less than five cruisers and some twenty destroyers. Only against the latter was a nominal success to be expected, and accordingly the fire was now directed exclusively toward the destroyers: as these in part came right near a number of hits on them could be observed. On the *Mainz* followed meanwhile hit after hit. Toward 1.20 p. m. the greater part of the guns, with their personnel, were already out of the fight. The upper deck resembled a heap of ruins. The ammunition supply halted, and at various times compartments under the protected deck had to be vacated on account of the danger from smoke and gas. The starboard engine was only making revolutions for half speed.

In this condition the ship received a torpedo hit on the port side amidships (probably in the fourth fireroom). In the conning tower fell for this reason all apparatus for

transmission of orders, with the exception of the sound and speaking tubes to the central station and to the torpedo compartment. The commander hereupon orders "Sink the ship; crew be ready with life preservers." This order, however, only reached the nearest battle stations, and was accordingly only partially carried out.

As a result of the torpedo hit there was a pause in the gunfire. In the control station there were at this time only the first artillery and torpedo officer, Lieut. Otto Niese and Lieut. Karl Pohle (j. g.). Somewhat later I myself went to the bridge, but without any knowledge of the last order of the commander. Therefore at my order fire was reopened, and simultaneously an endeavor was made to obtain torpedo hits. The chance for this was still hardly feasible, as the ship was completely immovable and the enemy cruisers and the greater part of the destroyers were astern or at the limit of torpedo range. The torpedoes fired, one to port at a cruiser and two to starboard at destroyers, were without success. Meanwhile the enemy's fire, which had been silent during the pause in fire on the *Mainz*, had again begun in full force. Furthermore two battle cruisers took part in the fight on the enemy's side. Whether they, too, obtained hits has not been established with certainty. However, according to the statements of some of the crew, a 34-centimeter shell struck the middle deck without exploding, while the gigantic columns of water from the shells striking around the ship hindered the vision. Finally, on the *Mainz* only two guns were in action. The men serving them were the last of all the gun crews of the upper deck.

Meanwhile I had been informed of the last order of the commander. The order, "Sink the ship; crew ready with life preservers," was thereupon repeated at 1.35 p. m. Although the order was transmitted over the entire ship from forward aft, this time, too, as was afterwards established, it did not reach the men who were in the lower compartments. The latter for the most part did not accordingly come up until when the enemy stopped his fire 10 minutes later. In the port engine room and torpedo rooms water had already entered.

How the upper deck of the *Mainz* appeared at this time is described by one of the gun captains of the vessel, Chief Boatswain's Mate Willi Klein, in the following words:

The picture which the *Mainz* presented was indescribable. Our radio station destroyed, a heap of ruins, was all ablaze; two funnels has been hit by shells and had fallen; searchlights were shot to pieces and shells continually struck the deck tearing great holes. Gun crews, messengers, and ammunition crews were literally torn to pieces. The upper deck was a confused heap of ruins, fire, embers, and corpses, and colored green and yellow by explosives that gave out stifling gases. Still the shells fell thick as hail on the motionless *Mainz*, but not alone the 200 to 300 hits in a space of 130 meters in length and 14 meters width, but also the sides of the ship in splintering brought death and destruction. As long as we defended ourselves the enemy did not cease firing. Our guns became silent one after the other, for they were shot to pieces and the crews serving them were dead. Finally only the fifth starboard gun was firing, although but slowly because the gun captain was dead and only one gunner was left. Nevertheless it fired until the last shell was gone. Then the enemy stopped firing, too.

The scene which the lower part of the ship presented after the torpedo hit is set forth at length in the following observations of the senior surviving engineer, Chief Engineer Johannes Johannsen, whose battle station was at the leakage indicator:

Toward 1.15 p. m. torpedo hit. Ship reared up, bent to a marked extent, and vibrated for yet a longer time. The emergency illumination went out. All glass that had not already suffered by shell hits was broken to pieces. The electric light

became dim and gradually went out entirely. Electric pocket lights were finally the only illumination. The engines no longer made any revolutions. The leak pendulum showed that the ship was gradually sinking forward. The endeavor to determine where the leak was were unsuccessful, as no compartment answered. After a short pause the resumption of firing was heard. Even then when the gunfire had ceased and sometime later the striking of enemy shells, no connection with the other compartments could be obtained. The conning tower no longer answered. The water which poured out of the speaking tubes showed that the water had risen above the protected deck and therefore the ship must have sunk that far in the leaking compartments.

As soon as firing had stopped on both sides the English vessels with great energy hastened to pick up the survivors out of the water. One destroyer—it was the *Lurcher*, the leading ship of Commodore Keyes—which until toward 2 p. m. had still taken no part, on the appeal of the *Mainz* even put her stern to her in order to take off the wounded. All the wounded, the rescue of whom did not seem completely impossible, in this way with the help of the men in the lower part of the ship who had not yet gone overboard, were gotten onto the destroyer.

At 2.10 p. m. the *Mainz*, after she had keeled over to port shortly before, without lowering her flag, sunk. A triple hurrah from the survivors accompanied the glorious end of her career.

The gun thunder from the fight of the *Mainz* was distinctly heard by the Third Torpedo boat Flotilla on the Westerems. The flotilla chief therefore held the boats in readiness just off the Ems mouth so that they could advance and attack in the case of denser weather. However, it became increasingly clearer. One of the boats—the *G 169*, Lieut. Lemelsen, commander—at 1.3 p. m., sighted several times directly off the approach buoy a periscope, and was fired at with a torpedo at 2.17 p. m. In this the conning tower of the U-boat partially emerged from the water. The torpedo passed only 15 meters ahead of the bow of the torpedo boat, which for its part fired shells at the opponent without success. The U-boat was pursued and looked for by three destroyers on a zigzag course, without, however, being seen again. Shortly thereafter, at 2.30 o'clock, another boat of the Third Torpedo-boat Flotilla, the *S 165*, commanded by Lieut. Von Bothmer, sighted three smoke clouds north-northwest, immediately headed thither at high speed, and at 3.50 p. m., about 35 nautical miles outside of Borkum, in 074 E., sighted an enemy cruiser with two destroyers on a southwest course, running at high speed. This was reported by radio. Here contact with the enemy was again established, but this circumstance without support by cruisers and without orders from the command could not be taken advantage of.

The fate of the *Mainz* was until later unknown to the German command as well as to the German forces at sea. On the contrary, at 1.03 p. m., shortly before the destruction of the radio plant, it had

been able to report that it was chased by enemy *armored cruisers* and therewith it had carried out the principal duty of the small cruiser of discovering enemy forces and reporting them shortly before it sunk. Just this report pointed out to the command very distinctly that they had to deal not merely with an outpost skirmish but with a major concerted action with cooperation of heavy vessels. Without delay, therefore, the German battle cruisers *Von der Tann* and *Moltke* received orders to proceed to support from Schillig Roadstead. At the same time the *Seydlitz*, the flagship of the commander of the scouting forces, Rear Admiral Hipper, weighed anchor in Wilhelmshaven Roadstead, and the *Blucher* received orders to follow.

The report concerning the presence of enemy armored cruisers, however, caused the chief of the First N. Flotilla, Lieut. Commander Hermann Bauer, to also take a hand. The latter had hitherto held himself aloof at Wilhelmshaven, as was just, and had left the measures to be taken to the chief of the Second Flotilla on the *Stettin*, Lieut. Commander Otto Feldmann, as senior U-boat commander present. However, at this first report concerning the appearance of enemy cruisers he did not believe that he ought to omit longer to point out on his part by a wireless order the importance of attacking these worthwhile objects with unrestricted use of U-boats. For a successful employment of U-boats it was, however, already too late. The boats should have begun an advance to the west as soon as they first sailed instead of taking up purely defensive positions between Helgoland and the Weser Lightship (see chart 19). The latter, however, was in accordance with the general opinion at that time that the enemy in an attack on the German Bight with heavy forces would advance to the river mouths so as to defeat our ships as they sailed out.

When the *Stettin*, at 2 p. m., sighted battle cruisers of the *Lion* class and retreated before them toward Helgoland, the intention of opposing the U-boats to these had to be given up because the distance from Helgoland to the position of the battle cruisers was about 35 nautical miles, a distance which, including orders and sailing delays of the U-boats could not be covered in less than about four hours. In answer to this question the chief of the Second N. Flotilla expressed himself as follows:

> As the enemy ships are retreating on a southwest course so as, I assume, to withdraw from the range of night attacks by our torpedo boats, the use of U-boats offers no prospects of success and therefore is not ordered.
>
> The question also arises of letting the U-boats advance to the west and spend the day at sea. As there is a possibility that the opponent on the next morning will advance toward the inner German Bight this will, however, be abandoned so as not to for this eventuality strip the inner German Bight of U-boats.

From the last sentence we see that the conviction had not yet forced its way everywhere that the German Bight offered no prospect

for U-boat attacks on heavy English forces; that furthermore these must be sought farther out.

Moreover, it must not be left unsaid that it had meanwhile been established that the English U-boats could then submerge quicker than the German. As a consequence of their shorter submersion time they were better suited for the bad visibility conditions of August 28, 1914. According to the statement of the chief of the Second U-half Flotilla the thick weather from about 10.40 a. m. on was such that surface navigation by German U-boats was almost synonymous with their employment. A bombardment of U-boats lying on the surface by enemy craft running at high speed might easily occur because of the long time required for submersion. Nevertheless one must say in concluding that in view of the value of the objects of attack the retention of the German U-boats in Helgoland Harbor meant a lost opportunity. Apart from the causes already named, there was doubtless of weight also the circumstance that the flotilla chief was on a cruiser which was not exclusively in the U-boat service, but on account of the small number of available ships had to take the defensive again and again against enemy forces.

At 11.25 a. m. the *Ariadne* too received orders from the commander of the scouting forces to advance to support from their outpost position in the outer Jade if possible.

On the basis of the orders issued in rapid succession, the movements following hereupon and the further position reports coming in the situation at 1.30 o'clock was as follows:

The farthest outside, the *Strassburg*, reported from 11 e about 30 nautical miles west of Helgoland a new fight with cruisers and destroyers that were south of her, while the *Cöln* in a square south of the *Strassburg* was likewise engaged with destroyers, so that it can be assumed that both ships were in battle with the same forces. About 20 nautical miles farther back there was the *Ariadne* in 135 e, which was informing the *Cöln* that it was coming to help, while the *Stralsund*, in the same square, was advancing to the west. In the advance the *Stettin* was in 151 e, the *Kolberg* in 138 e, and *Danzig* in 139 e, all on western courses.

After this survey let us turn again to the individual cruisers in the engagement. Of these the *Stralsund* was, toward 11 a. m., sailing out of the Wilhelmshaven lock and in passing the *Seydlitz* had received the order by searchlight: "Sail at once to support the *Cöln*." From the *Cöln* the report had likewise come that 132 e and 133 e were mine suspicions. In this it was a question, as already said, of an error which was based on false transmission of square data of a corresponding radio report from the *Stettin* concerning the laying of mines in squares north of Helgoland. Consequently some of the outgoing cruisers felt themselves compelled to go around the

squares named. The delay caused hereby resulted in preventing the timely juncture of the cruisers before meeting the enemy.

On the report of the first fight of the *Strassburg* in 122 e the commanding officer of the *Stralsund*, Capt. Harder, after passing the outer Jade lightship, steered a course in that direction, Almost directly off the Jade mouth an enemy submerged U-boat was sighted and taken under fire, but apparently without success. Attempts during the further advance to establish connection with the *Cöln* failed, as the latter did not even answer repeated radio calls, whence it was concluded that the radio station on this ship was out of order. On the contrary, the continual radio reports of the *Strassburg* gave sufficient data for the attempt to be made to bring the destroyers reported by it between the latter and our own ship. Unfortunately it was neglected, however, to announce this to the *Stettin*, slower of course, and which was on the starboard side at this time, as a common advance, so that the *Stralsund* soon thereafter found itself in 128 e alone against a superior force. Next, at two points to starboard gunfire was perceptible, which apparently passed slowly to the port side, then the flashes of the guns, and soon thereafter, in spite of the thick weather, three enemy cruisers could be made out, which proceeding in a line astern seemed to be engaged with an as yet unknown opponent on the offside of the *Stralsund*. The *Stralsund* swung about at once so as to take part in the fight, on a course east-northeast, and at about 72 hm. side position 280° opened fire on the foremost cruiser, which was at once answered by the latter. The visibility was, however, so unfavorable at this time that the fall of the shells could not be observed from the crow's nest. In one of the first enemy salvos a wire of the main radio net was broken, while another shell penetrated the ship's side above the strake without bursting, however, so that no water penetrated and otherwise no damage was done. Further hits were fortunately avoided by rapid changes in course. But then the unrecognizable opponent to the west of the enemy vessels apparently let them go so that now the fire of three cruisers was exclusively concentrated on the *Stralsund;* the latter now felt itself compelled to yield to superior force and turned off, strange to say, without being pursued by the enemy.

Also at the same time three other battle actions had developed in the immediate vicinity over an area of only 8 nautical miles, and yet completely separated from each other, two of which had been fateful to the German cruisers concerned, the *Ariadne* and *Cöln*.

While, however, the fate of the *Cöln*, until after the appearance of the English report, remained completely shrouded in darkness, the experiences of the *Ariadne* were thoroughly known on the basis of the battle report of her commander, Commander Teebohm.

The *Ariadne*, on the morning of August 28, as leading ship of the harbor flotilla of the Jade and Weser had been in the outer Jade. When gunfire was heard south of Helgoland and the radio from the *Stettin*, "Request cruiser assistance," came in she had already gone out once in the forenoon but had turned back again when the gunfire stopped and the enemy according to the in-coming radio reports had gone back to westward. When it reached the Jade mouth again the *Ariadne*, however, met the *Cöln*, which was sailing to westward at high speed, and soon thereafter received the order, "*Ariadne* and *Niobe* proceed to support if possible." The *Niobe* was in Wilhelmshaven taking on coal, so that the *Ariadne* alone followed the *Cöln*, which, however, as a consequence of its higher speed, soon disappeared in the fog. The commander of the *Ariadne*, Commander Teebohm, reported the further happenings as follows:

There then came radio messages from the *Mainz* and *Strassburg* that they were engaged with enemy destroyers. Avoiding on the way a square reported as mine suspicious, a course was steered for the above-mentioned ships. The *Cöln*, according to its radio reports, seemed to be following the same course.

Towards 1 p. m. an enemy U-boat was sighted on the port beam, which immediately submerged and tried to maneuver toward the *Ariadne*, but then disappeared.

Soon thereafter gunfire was heard on the port bow, and thereupon the vessel turned in that direction. Shortly before 2 o'clock two ships emerged from the fog, one of which, dead ahead, did not answer our recognition signals. It was made out to be an armored cruiser, and immediately an opposite course steered (see chart 26).

The second ship was the *Cöln* [1] which, standing farther north of the opponent, was being pursued and doubtless was only saved by the participation of the *Ariadne*. The opponent turned his fire at once from the *Cöln* to the *Ariadne*.

The *Ariadne* very soon received a hit in the forward boiler room which caused a bunker fire, so that the boiler room had to be left because of danger from smoke. In this five boilers were lost, and the *Ariadne* was reduced to a speed of 15 nautical miles.

The opponent, which to judge by its outline was the *Lion*, and behind which soon another battle cruiser of the same class emerged and took part in the fight, bombarded the *Ariadne* for about half an hour at distance of from 30 to 40 and 55 hm. The former distances are only estimated, as all measuring instruments had fallen.

The *Ariadne* received many hits from large guns, among them a series of hits in the stern, which burst into flames. Such of the personnel there as were rescued owed this rescue to mere chance. Also the bow received a series of heavy hits, one of which, penetrating the armored deck, put the torpedo room out of action; a second destroyed the cockpit with all the personnel there.

The midship section and the bridge, strange to say, remained almost spared from hits.

How many hits there were in all can not be estimated. Many apparently went through the rigging and exploded there. In the case of other shells, it was again observed that in striking the water they did not explode. Many shots passed to the right and left, as the *Ariadne* was running away from the opponent and only offered

[1] In the original report *Stettin* stands in plan of *Cöln*; the commander of the *Ariadne* doubtless then believed that he had the *Stettin* ahead of him; also the assumption made in the report that the *Cöln* was rescued by the attack of the *Ariadne* did not correspond to the facts in so far that the latter was soon afterwards hastened to its fate.

a small target. The shooting of the English was conducted in salvos at comparatively long intervals.

The effect of the shells was chiefly that of fire. All living quarters of the bow and stern burst at once into bright flames. An extinction of the fire at its origin was impossible on account of the great fire effect, especially as the fire-extinction apparatus on the armored deck was everywhere destroyed.

Towards 2.30 o'clock the opponent suddenly turned off to the west. I assume that he could no longer make out the *Ariadne* in the fog, as the stern was enveloped in smoke from the fire.

On the *Ariadne* firing was continued up to that time, with the guns still usable, finally of course by the gun captains, as every means of order transmission was inoperative. From the control station, on account of the vapor in the ship, observation was no longer possible.

In spite of the destructive fire of the opponent, the crew worked with the greatest calm, as in drills. The wounded were cared for by the stretcher bearers. All endeavored to make repairs when possible and to carry them out by themselves. The first officer, Lieut. Commander Wilhelm Franck, was swept away by a hit while on the berth deck making repairs.

After the opponent had turned away, I first ordered all hands to put out the fire. This turned out, however, to be impossible. The stern could no longer be entered and the bow had to be vacated at the same time. On the order to flood the ammunition magazines water had already penetrated to the forward chamber. It turned out that the latter was already under water, how has not been explained.

To penetrate to the stern magazine was impossible. An attempt had previously been made to open the armor-plated hatch to compartments I and II where men still were, but it proved impossible, as this cover was bent by shell hits.

The engines and the aft-boiler room remained entirely intact throughout the whole action, as well as the rudder.

The stay on the ship became more and more unendurable from the heat and smoke and because the ready ammunition still at the guns began to explode. These explosions do not appear to have caused much damage. Only a few small splinters were thrown about, which, in some cases, penetrated the bridge from below.

The crew collected on the forecastle in the greatest calm, to which place the wounded were also brought. I gave three cheers for His Majesty the Kaiser, whereupon the Flag song and "Deutschland, Deutschland über alles" were sung. The wounded joined in too. One man gave three cheers for the commander. Shortly before 3 o'clock the *Danzig* approached and sent boats over.

The *Ariadne* could also lower both cutters into the water, as the midship section, as just said, had not suffered so severely.

First the wounded were taken off in boats which were lowered by lines from the forecastle. When it became gradually impossible to stay on the forecastle the rest of the crew jumped overboard when ordered. The swimmers swam, some of them to the *Danzig*, and *Stralsund*, which likewise were in the vicinity. Those that could not swim who held on to life preservers and hammocks were picked up by the boats.

Meanwhile the fire had gone down in the consumed portion of the ship and the explosions became less frequent.

I therefore went with some men to the *Stralsund*, who with an *Ariadne* boat had come to the ship again, to ask the commander of the *Stralsund* to take the *Ariadne* in tow. The *Ariadne*, however, at this time suddenly keeled way over and capsized, at 4.25 o'clock, with the flag still flying. The keel for some time could be seen above the surface (cf. charts 19, 25, and 26).

The *Stettin*, warned by the heavy gunfire in the vicinity of the *Ariadne*, was able to escape the destructive effect of the heavy caliber of the enemy battle cruisers by immediate turning away at the right time.

Previously the *Stettin* had been distributing orders to U-boats south of Helgoland, and only when toward 12 noon the radio station was again ready for use and the incoming radio messages could be read again new resolutions were made. Signals coming in concerning the course and position of the *Mainz*, *Cöln*, *Strassburg*, and *Stralsund* made it plain that all these ships were aiming for approximately the same point, so that the *Stettin* now steered a course thither at top speed. In so doing the cruiser soon thereafter became the target and participated in the fight of the *Ariadne*, concerning which the commander of the *Stettin* reported as follows:

At 1.40 p. m. the *Ariadne* came in sight, which, however, was first taken for an English mine cruiser. The exchange of recognition signals was made only after longer time when it became clearer for a time. The visibility varied very greatly at this time.

At 1.45 gunfire was heard ahead, which, toward 1.55, made the impression that it came from heavy artillery. At 1.58 o'clock bright gun flashes were observed, and thereupon an opposite course to starboard was followed. While still turning, heavy shells were observed falling in the vicinity of the *Ariadne*. While the *Stettin* was turning, the opponents were made out to be the newest type of armored cruisers.

At 2.5 o'clock the forward battle cruiser opened fire on the *Stettin* too, which, because of the unfavorable fire position with respect to the opponent and in order not to facilitate giving the range by our gun flashes, I did not answer.

The opponents' shots landed quite near the ship (inside of 500 meters) on both sides, ahead and astern, but the majority of them went over. The visibility apparently did not permit observation to the opponent. He stopped firing after 10 shorts, but resumed it again a few minutes later.

At 2.20 o'clock the *Danzig* was sighted to south off the starboard beam on a western course, but on the searchlight signal that the *Stettin* was pursued by enemy armored cruisers it likewise turned on an eastern course. At the same time the opponent seemed to break off the pursuit.

On the *Ariadne*, fires were observed in the stern; it still followed at high speed. The *Danzig*, which stood off the starboard quarter of the *Stettin*, later turned around when the gunfire became silent in the west so as to bring aid to the *Ariadne*. The *Stettin* went toward Helgoland to restore connection with the U flotilla.

No losses or damages were sustained from the fire of the battle cruisers.

In regard to the activity of the *Cöln*, the flagship of the first leader of the torpedo boats, Rear Admiral Maass, commanded by Commander Meidinger, admiralty staff officer, Lieut. Guggenberger, all serviceable data are lacking. Toward 1 p. m. the *Cöln* made the last position report, at this time the ship was 16.5 nautical miles north-northwest of Norderney Lightship on a northern course. At 1.30 o'clock its last radio was broken off without giving position. Only a single survivor of the *Cöln*, the stoker Neumann, was rescued. His statement, which was brought out later in the discussion of the

rescue of the shipwrecked, can of course give no information as to the control of the vessel, as Neumann, being a stoker, did not come on deck until the ship was in a sinking condition. Nevertheless, from the statements at hand in agreement with the other events, it can be shown almost without omission what courses the *Cöln* must have steered and what consequences resulted from its battle activity.

The *Cöln*, at top speed, steamed out of the Jade and followed the course of the *Strassburg*, without, however, keeping the latter in sight. As the *Strassburg*, at 11.55 a. m., got into the first fight with destroyers and described a circle, the distance between the *Strassburg* and *Cöln* became visibly less. For the *Cöln* the gun thunder became constantly more distinct. Then for 10 minutes the gunfire at the *Strassburg* ceased, to be heard again by the *Cöln* later. The *Cöln* stood at this time only 7 miles behind the *Strassburg* and knew from the reports of the *Mainz* that the latter was about in the same latitude, 2 nautical miles west. Thus the chance for the complete destruction of the opponent by three German cruisers was offered. The same thought must have prevailed on the *Cöln* as on the *Mainz* when at this time the commander informed the men that they would meet the enemy in half an hour. The *Cöln* then continued until 12.50 o'clock behind the *Strassburg*. From time to time gun thunder must have been heard ahead, as the *Strassburg* again and again encountered destroyers. As the course of the *Strassburg*, because of avoiding torpedo shots, was not quite straight, the *Cöln*, at 12.50 o'clock, must have been, at most, 5 to 6 miles behind the *Strassburg*. At this time the *Mainz* sighted enemy cruisers, which for a quarter of an hour has been engaged with destroyers. The *Cöln* had received this radio from the *Mainz*, for the *Cöln* transmitted it to the commander of the scouting forces. At this time the *Cöln* must have made a course change of about 8 points to west-southwest, for otherwise it would have been impossible that at 1.30 p. m. it should have come to the point where it was later sighted by Admiral Beatty. This change in course is explained very easily from a military viewpoint by the fact that the gun thunder from the *Mainz*, which at this time was 9 nautical miles distant, must have sounded stronger off the port beam, all the more so because the targets at which the *Mainz* was firing, the English destroyers and the *Arethusa*, stood between the *Cöln* and *Mainz*, and the *Arethusa* was firing with 15 centimeter guns. If the *Cöln* wished to attack there, and that was something to be taken for granted by a leader of torpedo boats, then he had to make this change in course. About 20 minutes after the *Cöln* had changed to the new course, on which it constantly heard gun thunder dead ahead, which came closer, it sighted the port bow of the *Arethusa*, with the retreating torpedo boats (statement of the *Arethusa*). The speed of the *Arethusa* was at this time already greatly reduced, and

it was therefore the task of the *Cöln* to bar the path of the retreating boats to westward, especially as the courses lay very favorably with reference to each other. The *Cöln* therefore changed her course a little so as to relieve the *Mainz* and to surround the retreating destroyers, which now were already in sight (charts 19 and 28). At 1.30 o'clock the *Cöln* reported by radio that she was already engaged with these. This radio, as already stated, was suddenly broken off. The position was not given. This was the latest report from the *Cöln*. Her further fate was first learned from the British report which came in later.

Meanwhile the *Strassburg*, because of engagements with pursuing light forces east and north of it, had pushed farther and farther north and west, but then, only partially shaking off her opponents, had again headed south, for the gun thunder preceptible in that direction, so that at the beginning of the *Ariadne* fight it had stood only about 5 nautical miles west of the latter. Meanwhile her very short fights had always taken place in the same way. The English destroyers usually started the attack immediately after sighting and always with great success outmaneuvered the *Strassburg* by slowly turning off and kept her under fire as long as the distance and the slight visibility enabled sighting the target and observing the fall of the shells. As a rule the enemy forces very soon passed out of sight again. Under these circumstances our own fighting, as a consequence of keeping contact with the constantly changing targets, placed high demands on our training. The fire effect of the enemy's artillery was inconsiderable in spite of the very great expenditure of ammunition. In a few cases enemy shells dropping abruptly at a short distance detonated of themselves. Only once was the ship hit and that by a 15-centimeter shell which struck far astern behind the armor belt oblique from the forward end on the bulkhead between the first and second compartments above the protected deck, with the only result that two large holds were flooded. Apparently these shells, too, struck obliquely and did not explode, for neither the shell nor pieces of it were found. Also no explosive effect could be ascertained.

Up to 1 p. m. not less than three attacks of destroyers had been warded off successfully. Of these the first began when, toward 12.27 o'clock, a scout and several destroyers were sighted off the starboard side, and lasted 10 minutes, to be repeated at about 12.49 o'clock, perhaps by the same destroyers (cf. chart 27). Another attack, this time supported by two enemy cruisers, took place at 1.4 o'clock. In this, in the case of one of the approaching destroyers, after the third salvo a hit was made amidships with an accompanying white cloud of smoke. At this time gun thunder was distinctly perceptible south or southwest of the *Strassburg*, while a radio report from the *Mainz* confirmed the supposition that the ship was to be

sought in this direction. The commander of the *Strassburg* therefore had the following radio report sent: "Position 117 e; course west. Enemy in the south," and pushed after the destroyers, which were withdrawing to the southwest so as to drive these on to the *Cöln* and *Mainz*, supposed to be on the way from the southeast and southwest, and at the same time to effect a juncture with these cruisers. In so doing it came again into successful attack with destroyers, which finally, at 1.40 o'clock, was repeated, this time, however, by two groups simultaneously, one in running, the other in passing. At this time gunfire was heard in a southeastern direction, which, according to a radio report coming in at 1.30 from the *Cöln*, "Position 105 e; am engaged with destroyers," could only come from the latter. Apparently heavy guns were also firing. The *Strassburg* immediately advanced in this direction and called the *Mainz* twice, giving its own course and position, without, however, obtaining an answer. The *Cöln*, too, no longer answered to such a call at 1.38 o'clock. The last important signal from the *Mainz* concerning the presence of enemy armored cruisers was not yet known at this time on the *Strassburg*. Therefore the danger of our own position was first fully realized by the commanding officer when at 2 in the afternoon an enemy battle cruiser came in sight ahead, around which many destroyers were gathering. Commander Retzmann at once turned away from it on a northern course without starting a fight the result of which could not be doubted in view of the superiority of the opponent, which was announced to the *Strassburg* as a ship of the *Shannon* class, in view of the four 23.4 centimeter and ten 19-centimeter guns of the enemy battery. But the northern course also brought unexpected dangers, for eight minutes later there came, in all probability the forces previously sighted in this region, new forces in sight, and indeed for a short time two "city" cruisers were recognized off the port bow about 80 hm. distant, which, however, could be avoided in time by a change in course of a point to starboard, so that without becoming engaged they vanished again after a quarter of an hour.

After strong forces had been sighted in the south the attempt had to be given up of trying to connect with the other cruisers in this direction; in fact these could be reached only on an arc extending far back to northward and eastward. However, hardly was this movement started when a new surprise occurred, for at 2.30 p. m. there suddenly appeared in 104 right in the middle, 4 points to starboard, four battle cruisers of the *Lion* class in a line astern on an opposite course. The distance was only 80 hm. (charts 19 and 27). Only if it was possible on account of the hazy weather to so deceive the opponent that he would take the *Strassburg* for an English vessel was the ship to be rescued. To maintain this assumption as long as

possible, Commander Retzmann kept the course at first unchanged, for any sudden change in course would at once arouse suspicion; it would also easily bring the ship again in the zone of cruisers that had just passed out of sight. Only quite gradually did the ship turn 1 point to port, but nevertheless the battle cruisers were passed at only 75 hm. distance. The deception succeeded, for only after passing did the enemy flagship make a searchlight signal to the *Strassburg*, which, however, was not answered. Apparently it was the letters U. S. R., a call which was similar to others observed at various times. At 2.42 the enemy battle cruisers passed out of sight.

For 12 minutes the ship had been in the immediate vicinity of superior enemy forces, and any minute of this time might have brought an end to the deception. Then the *Strassburg* would have been certain of the fate of the *Mainz* or *Cöln*; only the calm and resolute guidance of its commander saved the ship and crew from this desperate situation.

With the sighting of the battle cruisers the plan which underlay the enemy undertaking was discovered. After breaking through the German outpost line the English light forces were to draw our cruisers on to the farther back U-boats and strong cruiser squadrons. Other U-boats placed off the river mouths were either to hinder the exit of German heavy forces or cause these losses before they could give battle to the British cruiser squadrons. The English plan was considerably favored by the prevailing unclean weather on this day. This made it impossible for the German outpost lines to obtain at the right time a clear idea of the strength and intention of the opponent. In this way the enemy succeeded in always opposing the individual German cruisers with superior force.

Even although the *Mainz* at 1.3 o'clock, the *Strassburg*, at 2 o'clock, and the *Stettin*, at 2.10, had reported large enemy cruisers and armored cruisers, still this was unfortunately in such an indefinite way that the command remained in doubt as to number, class of ships, and strength of the forces sighted. Complete explanation of the situation first came in when the *Strassburg*, at 2.35, found suitable expression for it in the following report: "II/e First Battle Cruiser Squadron, course southwest."

At 2.25 p. m. the fleet commander ordered that the First and Third Squadrons should immediately get up steam. Almost at the same time with the last report the decisive order was issued to recall all small cruisers and for all torpedo-boat flotillas to be ready to sail at dark. After the presence of the First British Battle-cruiser Squadron had been established beyond doubt, the commander of the scout forces received the order: "Do not risk large cruisers against armored cruiser squadron." It was now evident that they, too, would be exposed to a superior force before the German battleship squadron

could participate. The commander of the scouting forces now supplement this order in that he directed the small cruisers to return to the *Seydlitz.*

It will be asked, in view of the events, why this order was not issued earlier. As a matter of fact, the commander in chief of the fleet had the impression up to the time of the report of the presence of enemy armored cruisers that our small cruisers were superior in numbers. (According to the reports coming in up to 1 o'clock he believed that it was only a matter of an advance of two, at most four, cruisers and about two destroyers flotillas, which, moreover, had already been driven off.) Only when the radio messages coming in from 1 o'clock on showed the previous view to be erroneous did the fleet command take a hand in the measures of the commander of the scouting forces. In this connection we find in the war diary of the latter the observation that a similar order was considered by him but was not issued because the small cruisers, as soon as armored cruisers had been reported, had been compelled to go back because of the general tactical training and the regulations of the naval war direction for cruiser service. This is doubtless correct; it must be considered, however, that on the sea at times in close violent conflict the receiving and transmission of radio orders to the bridge could only proceed with friction, errors, and delays in contrast to the more peaceful circumstances on the far-distant flagships. On the latter, therefore, the entire situation could more clearly be examined, free from momentary impressions. An order at the right time which should have gone out in the form of a general direction would doubtless have meant supporting the fighting ships and a relieving of the commanders from responsibility.

The recall order would then only have answered if it has been issued not later than 12.30 noon. The presence of heavy enemy forces presumably was not then established. As a consequence of it the command would probably not have been spared the reproach of excessive holding back and insufficient desire for attack in view of the spirit of "at the enemy" prevailing in the fleet. However that may be, it was a fatal error of those in charge to assume that light forces attacking so far from their base would not be supported by heavy vessels; that the opponent had attempted his invasion with insufficient means. This error, shared more or less, to be sure, by the entire fleet, and the resulting measures, not, however, the heroic behavior of the small cruisers in a situation in which they were placed only by the orders of the command, were to blame for the German losses.

The order found the ships so far as it was possible for them on the return trip or at the scene of the disaster to the *Ariadne.* It strengthened the commanding officer of the *Strassburg* in his resolution to

leave the getting in touch with the *Cöln, Mainz,* and *Stralsund* to chance; and instead of this, on an eastern and later a southern course, to search for the large cruisers. The position and battle reports of the *Strassburg* made regularly were from 1 o'clock on only occasionally picked up by the aforesaid small cruisers, and since 2 o'clock were not answered as a rule; data as to their position were therefore no longer at hand.

Meanwhile the *Danzig* as well as the *Stralsund* had reached the vicinity of the burning *Ariadne.* The *Danzig,* commanded by Commander Reiss, who fell later in the battle of the Skagerrak as commander of the *Wiesbaden,* had, at 12.25 o'clock, together with the *München,* received orders to sail at once and go to the *Strassburg.* In the advance to the west in execution of this order the *Danzig,* at 2.9 p. m., had reached the vicinity of the battle of the *Ariadne.* The gun thunder of heavy artillery was heard at this time, also the falling of several shells was observed, so that the *Danzig* turned immediately to give assistance to our endangered forces on a northwest course. On this course there soon came in sight, steaming northeast at high speed, the *Stettin* and behind her the *Ariadne.* The *Danzig* turned immediately on a parallel course to the *Stettin* and obtained from the latter a good account of the battle situation. When at 2.20 p. m. the radio from the *Stralsund* came in: "122E left center, am engaged with three enemy cruisers," the *Danzig* immediately turned again south-southwest so as to unite with this ship. Apparently, useful work could be performed there, while in the north enemy armored cruisers seemed to block a further advance. This decision was untenable, as shortly afterwards the flag signal was recognized on the *Ariadne:* "Am in urgent need of assistance." The ship at this time was burning fore and aft and seemed to be no longer under control. The commander of the *Danzig* therefore decided to bring assistance to the ship in spite of the enemy armored cruisers. He went as close as possible to it and directed the rescue of the *Ariadne's* crew, using two cutters. Obviously he did not cause the rescue work to be discontinued on account of the immediately thereafter arriving recall order. However, to get protection from his own forces, he sent a radio to the *Danzig* at 2.50 o'clock giving his position: "Rescuing *Ariadne* people." Getting this radio through encountered considerable difficulties because of the steam being let off and detonations following in rapid succession on the only 50 to 100 meter distant *Ariadne.*

While these events were taking place the *Stralsund,* after her fight had stopped, had run back about 5 nautical miles in an eastern direction when it sighted the *Kolberg* and immediately afterwards heard gunfire. Turning toward the *Kolberg* it recognized the *Danzig* and *Ariadne;* then it participated in the rescue work.

Also the *Kolberg,* commanded by Commander Widenmann, had after sailing tried to unite with the *Strassburg,* but at the beginning of the *Strassburg* fights was still far back, as the ship could not make more than 22 knots and because of the U-boat danger was steering a zigzag course. At 2.5 p. m. gunfire was heard off the port bow, the cause of which was explained by the radio from the *Stralsund:* "Am engaged with three small cruisers; course east." When, then, at 2.20 o'clock, the *Stralsund* itself came in sight, the *Kolberg* likewise turned on an eastern course, as a farther advance to westward on account of the armored cruisers meanwhile reported by the *Strassburg* and *Stettin* appeared unfeasible. But still the intention of joining with the *Strassburg* was not yet given up, but instead she turned to north-northeast so as to reach her perhaps by pushing far out on this course. Next the *Ariadne,* with the other ships, were sighted, which were sufficient for the rescue work, so that the commander of the *Kolberg* resolved to advance to the northwest so as to take up the protection of the rescue work by scouting toward the enemy. This seemed all the more necessary when an enemy armored cruiser was reported only 14 nautical miles away. Although in this conduct the recall order of the commander of the scouting forces was not carried out to the letter, and the *Kolberg* got into danger of likewise being fired at, still the use of the cruiser was correct and unavoidable. By radio the commander of the scouting forces was informed of the situation. At 3.45 o'clock the *Strassburg* appeared from the north and reported that four enemy battle cruisers had been finally sighted in 117 e, and soon thereafter came in sight our own battle cruisers *Von der Tann, Moltke,* and *Seydlitz* (charts 19 and 27).

The *Von der Tann* and *Moltke* had sailed first and had, under the command of the third admiral of the scouting forces, Rear Admiral Tapken, passed the Outer Jade Lightship about two hours after the first report concerning the presence of enemy armored cruisers. The *Seydlitz,* with the commander of the scouting forces on board, was still back on account of condenser damage, and the *Blutcher* had first to be taken through the locks out of the harbor. So as not to permit at the same time forces entering the German Bight from the north, the *München* had already received orders at 2.6 p. m. to explore in the direction of Amrum; likewise the *Hela* had been left at its station.

Rear Admiral Tapken saw before him a difficult task, because for about two hours no report of any kind had been received from the *Mainz* and *Cöln,* so that their position could not be even approximately determined. When, therefore, the report from the *Stettin* came in (*Ariadne* severely damaged in 121 e″), the decision was made at once to steer a course, first, for this square to afford pro-

tection to the ships there, especially as a report of the *Strassburg* at 2.31 o'clock destroyed the doubt as to whether the latter, too, needed support. Meanwhile an order of Rear Admiral Hipper had limited the freedom of motion of the outgoing battle cruisers in that they were not to advance farther than square 126 e before joining the *Seydlitz*. He did not want the battle cruisers to attack the enemy in single groups, but to use them if possible in close formation.

Running at a speed of 25 nautical miles and accompanied by the Eighth Torpedo-boat Flotilla, they arrived at the scene of disaster to the *Ariadne* toward 3.25 p. m. On reaching there the third admiral of the scouting forces immediately sent the Sixteenth Torpedo-boat Half Flotilla in a western direction to supplement the protective work already begun by the *Kolberg*. At 4.25 o'clock the *Ariadne* capsized after a boiler explosion and sank at 54° 6.8′ north and 7° 14.5′ east, after the survivors of the crew had been rescued.

At 4.10 p. m. Rear Admiral Hipper had also appeared at the scene of the disaster in his flagship, the *Seydlitz*, and now conducted a short advance of the battle cruisers in a northwest direction, in which the *Kolberg*, *Stralsund*, and *Strassburg*, as well as the Eighth Torpedo-boat Flotilla, formed the escort, while the heavy ships in extended formation at 8 hm. distance apart, with a speed of 15 nautical miles, followed. At the same time the Third Torpedo-boat Flotilla, on the Ems was directed to be ready to sail for night undertakings.

The goal of the advance of the commander of the scouting forces could, however, only be a limited one, for first of all the commander in chief of the fleet had ordered that the battle cruisers were not to be risked, and furthermore the chance was slight, even granting the use of torpedo boats for night attack, of obtaining contact with the enemy. The purpose of the advance was, therefore, exclusively, as long as the visibility permitted, to make an attempt to pick up the *Cöln* and *Mainz*, or at least to determine where they were. To repeated radio calls came no answer, and also inquiries of the other cruisers were without result. The battle cruisers at the northern point of their advance missed the place where the *Cöln* sank by only 8 nautical miles; one of the small cruisers even got within 4 nautical miles of this point. Just to this regrettable chance is it to be attributed that the survivors of the *Cöln*, still drifting about at this time, were not found and rescued. From the entire situation it was, however, hardly to be expected that survivors could be found in this region, especially as it could be assumed with certainty that everything had been done by the British ships in the way of rescuing and taking prisoners, as no further engagements hindered the enemy in doing so. This explains the fact that neither light forces nor torpedo boats were left behind for further searching of the field of

battle, nor hospital ships summoned for this purpose. Instead, at 5 p. m., when the *Blücher* too had joined the other cruisers, the advance was given up without result so that they could run into the Jade before dark. The vessels were not to be exposed unnecessarily to the danger of surface U-boat attacks at night and to pass the bar of the Outer Jade before the arrival of low tide.

The patrol of the German Bight was again established, and the advance-post positions taken for the night as planned; while the Eighth Torpedo-boat Flotilla occupied the outer, the advance-post boats the inner line, while the cruisers *Kolberg, Hela,* and *München* were given the task of protecting these forces. Previously the airplanes had been given orders to explore, and as far as 100 nautical miles northwest of Helgoland, outside of U-boats, no enemy forces could be ascertained. Therefore, the commander in chief of the fleet abandoned the intention of using torpoedo-boat flotillas for night attacks on the retreating opponent. Consequently the forces that had taken part in the day battle for the most part went in, and at 9.23 o'clock the *Seydlitz* anchored in Wilhelmshaven Roadstead. Rear Admiral Hipper went to the commander in chief of the fleet and gave an oral report of the events.

When night fell nothing was yet known in regard to the fate of the *Mainz* and *Cöln;* it was the English report which first gave light on the ensemble of the operations.

According to the report of Commodore Tyrwhitt, all ready ammunition had been replaced and all guns, with the exception of two 10.2-centimeter, had been cleared for action. Nevertheless the situation became from the fire of the *Strassburg*—that is, of a single German cruiser—soon so critical that only the immediately instigated attacks of the destroyers and the powerful support by the *Fearless* rescued the endangered English flagship from still more severe damage and perhaps even capture by the enemy. This is especially emphasized in the report of Commodore Tyrwhitt. Concerning the German gunfire effect he expressed himself as follows: "We received a very rapid and almost accurate fire from this cruiser. Salvo after salvo fell between 10 and 30 meters from the ship, but not a single shell hit. Also torpedoes fired at us were well aimed but stopped before the target." Apart from the fact that no torpedoes were fired by the *Strassburg,* this account is disputable in other respects, for if, contrary to the observations of the *Strassburg,* no German shells hit, then it is incomprehensible why, as distinctly emphazised, the situation became so critical. In any case, however, the further statement is incorrect that the *Strassburg* was severely damaged by the 15-centimeter guns of the *Arethusa* and the reported brilliantly conducted fire of the *Fearless,* for, as already mentioned, in its numerous engagements on August 28, the *Strassburg* received only

one hit and that from a 15-centimeter shell which did not explode. Still less did the *Strassburg*, in contrast to the English report, begin the retreat to Helgoland, but was merely prevented by new English forces, coming from the east, from again taking up the fight with the *Arethusa*.

What forces were concerned in the further reports of the *Strassburg* is not shown by the British report. The assumption, however, will not be wrong that they were the detached small cruisers of the First Light Cruiser Squadron and scattered destroyers which, after pursuing the boats of the outer German outpost line, were seeking to join with their battle cruiser squadron. These forces, too, likewise far superior in number, avoided a decisive battle with the single German cruiser.

The report of Commodore Tyrwhitt contains, however, further demonstrable incorrect statements.

For instance, he asserts that the *Arethusa* sighted the *Mainz* four minutes after discontinuing the fight with the *Strassburg* and got into a fight with the latter, in which the first Light Cruiser Squadron did not take part until 25 minutes later, after the *Mainz* was already unable to maneuver and in a burning and sinking condition. Actually the *Arethusa-Mainz* fight began at 12.30 noon and was entirely indecisive until the participation of the three cruisers of the First Light Cruiser Squadron, *Southampton*, *Birmingham*, and *Liverpool* (12.45 o'clock). From these cruisers the *Mainz* received the first hit; finally she fell a victim to their superior numbers, not to the *Arethusa*. How little the flagship of Commodore Tyrwhitt at this time was in a position to destroy a completely capable German cruiser after it had not been a match for a ship of such small fighting power as the *Frauenlob* is evident from the fact that the commodore shortly after the first contact with the *Strassburg* had sent several urgent signals to Vice Admiral Sir David Beatty. As at the same time similar calls for help came in from Commodore Keyes, the commander of the U-boats, and from the destroyer *Lurcher*, the latter immediately sent the light cruiser squadron, which, with three ships, arrived just in time to turn the battle with the *Mainz* in favor of the English. But even before this could arrive at the scene of action there were further disquieting signals from the *Arethusa* in which it reported the participation of a large German cruiser and stated that it was hard pressed and in urgent need of help. Presumably the *Strassburg* was confused with one of our old armored cruisers on account of the four funnels. Similar signals also came from the commander of the First Flotilla. These radio calls for help could not be brought into agreement with the discription of the state of the fight given in the later report of Commodore Tyrwhitt. They corresponded more to the actual situation, however, than the latter. At all events, they were so considered by the com-

mander of the battle cruiser squadron. To the latter the situation appeared all the more critical, as the light English forces were at this time between the Jade and Ems. In this judgment he was doubtless correct.[3] If one considers the position of the German cruisers at 2 o'clock, and their position with reference to the English, then the English attacking forces on their way back were actually surrounded by five German cruisers. The fate of the English attacking forces was indeed sealed if help did not soon come. This caused the decision of the commander of the English battle cruisers in keeping with the situation which had fatal consequences to not less than three German ships.

When the calls for help came in Admiral Beatty was already disturbed over the absence of the two vessels of the light cruiser squadron which had not yet come back. Also the signals so far had brought no explanation. However, the last signal concerning the sighting of a large cruiser seemed to point to the fact that even the light cruiser squadron without support would no longer be equal to the situation. He therefore advanced immediately with the battle cruisers, for if further support was to have any value it must be, to use his own words, "overwhelming and carried out with the greatest dispatch." The risk of danger from enemy U-boats, in spite of the slight protection from only four destroyers, had in so doing to be taken into the bargain. However, it was facilitated by the fact that our high speed would make such attacks difficult and the smooth sea would facilitate the prompt discovery of U-boats. Their presence was assumed all the more definitely when it was thought that three U-boats had already attacked at 12 o'clock noon, although at that time all German U-boats lay in Helgoland. However, Beatty considered the most serious danger to his advance the appearance of a German battleship squadron, although he hoped that such would not come out in time if his blow could only be struck quick enough.

Hitherto the English battle cruisers—that is, the *Lyon*, *Princess Royal*, and *Queen Mary* of the First Battle Cruiser Squadron—reinforced by the *Invincible* and *New Zealand*, had been held in readiness in a covering position about 30 nautical miles north of the Ems. At 12.30 noon they sailed eastward at top speed, under the command of their admiral. Thus drew near the fate of the German ships. At 1.15 o'clock they met the *Fearless* and the First Destroyer Flotilla, which were on the way back westward, then the light cruiser squadron in battle with the *Mainz* dead ahead, which seemed to have already

[3] The report of Beatty runs at this point as follows: "Shortly after 12 o'clock several signals were received which stated that Commodore T., on the *Arethusa*, and Commodore S. both needed help. I ordered the light cruiser squadron to support the torpedo-boat flotillas. Later I got a signal from Commodore T. that he was attacked by a large cruiser and a further signal that he was hard pressed and requested help. The commander (D.) of the first flotilla likewise signaled that he needed help. After these signals the situation seemed critical to me."

been defeated. Whether the battle cruisers had yet opened fire is at this time, on account of inexact observations on the *Mainz* and in the report of the English admiral, uncertain. In any case, the battle cruisers turned soon after sighting the *Mainz* on a northeast course, as in this direction gunfire was again audible.

Meantime, as the English report continues, the *Arethusa* and the Third Flotilla had gotten into a bubble with a second cruiser of the *Kolberg* class (it was the *Cöln*) at long range. At 1.30 o'clock these ships came in sight on the *Lion*, and the German cruiser was on the port side of the British battle cruisers. Vice Admiral Beatty immediately headed eastward so as to cut off these cruisers from Helgoland and opened fire at 1.37. At the same time the *Cöln* had turned around and tried to escape ahead of the battle cruisers toward Helgoland, but was obliged, in view of the high speed of 27 to 28 nautical miles of the pursuers, to soon give up this attempt, and at 1.42 o'clock turned off to the northwest. It still apparently had hope of escaping destruction, all the more so because at 1.56 o'clock another German cruiser with two funnels was on a course dead ahead of the battle cruisers, toward which the latter now turned.[4] It was the *Ariadne*, which soon thereafter was reached by two salvos from the *Lion* and set on fire. When burning and apparently in a sinking condition she disappeared in the fog as the English left her. The English admiral seems to have had an important reason for this. In the meantime his destroyers had reported to him that farther eastward floating mines had been sighted.

According to the reunion of all forces as planned, it was time, besides, to begin the retreat. Previously the first cruiser taken under fire was said to have been completely destroyed; therefore the battle cruisers turned in a great arc to port on an opposite course. Soon the *Cöln* came in sight on a southeastern course at slow speed with the war flag still flying. Thence it follows that the *Cöln*, when it observed that the English were directing their fire to the other side, endeavored to disappear on the opposite side in the thick weather. Her speed must have been considerably reduced and also she must have suffered considerably, for otherwise the admiral would not have specially mentioned that on the occasion of the last coming in sight the flag was still waving. When the English squadron passed out of sight in a northeastern direction the cruiser tried to cross behind the enemy on a southeastern course without being caught in its sudden turning about. The fire of two turrets of the English flagship at close

[4] This agrees exactly with the statements of the commander of the *Ariadne:* The *Cöln* was relieved for a time and got out of sight of the English admiral, or, as the report states, "the German cruiser, standing northward, was chased by the opponent and doubtless was only rescued by the participation of the *Ariadne*. But this rested on an error. Apparently drifting ammunition boxes such as used to contain cartridges on the German ships were taken for mines Floating mines were never employed by the German forces during the entire war. The report was, however, sufficient to prevent Beatty proceeding farther eastward.

range was sufficient, after two salvos had hit the ship at 2.35 p. m., to cause it to sink. With the sinking of his flagship Rear Admiral Leberecht Maass met a hero's death, the first German admiral to do so. He had already fallen when the ship sank. With him the torpedo lost one of its most renowned enthusiasts, who unfortunately was not permitted to use it in night attack on the enemy. While the *Cöln* was overtaken by fate, almost at the same time the *Strassburg* passed the enemy battle cruisers only 4 nautical miles away. Her fortunate escape is of course to be attributed to the fact that the attentiveness of the English vessels was at this time exclusively devoted to the sinking *Cöln*.

Unfortunately the English did not show in this case the same chivalry in rescuing the survivors as in the case of the sinking of the *Mainz*. To be sure, as the English report says, the destroyers with the battle cruisers were immediately dispatched for this purpose, but they soon came back with the report that they had found no one. This statement was incorrect, as will be shown later.

With the sinking of the *Cöln* the fights of this day came to a close. Without having met an opponent of equal value, the battle cruisers, at 2.40 o'clock, turned off to northward and covered the retreat of the other forces until dark, not without supposed U-boat attacks which were successfully avoided by the maneuvers of the *Queen Mary* and the small cruiser *Lowestoft*. At 7 p. m. all destroyers were assembled, or news of their whereabouts had come in. Thereupon the battle cruisers, the small cruisers acting as a rear guard covering force, proceeded farther to northward "in accordance with the orders of the commander in chief." It is to be assumed that they united again in the northern North Sea with the "Grand Fleet," which was likewise at sea on August 28, 7 a. m., southeast of the Orkneys in 58.2° north and 0.2° west, protected against U-boats by two flotillas and with cruiser escort, had advanced southward without, apparently, passing beyond the fifty-eighth degree of latitude. Toward noon the fleet had likewise been first at 58.19° north and 0.21° east.[5] At 8.45 o'clock the *Liverpool*, with 7 officers and 79 men from the *Mainz*, was detached to Rosyth. On the other hand, the aiding and rescue work in the case of their own detached vessels was left to Rear Admiral Christian.

The latter, according to the plan of the Admiralty, actually had the supreme command during the undertaking and was to carry it out merely with the old armored cruisers under him, *Euryalus*, *Bacchante*, *Cressy*, *Hogue*, *Aboukir*, and the small cruiser *Amethyst*. The commander in chief of the Grand Fleet, Admiral Jellicoe, as soon as he received knowledge of the expedition, had, however, at

[5] The data concerning the Grand Fleet is taken from the book, "The Grand Fleet," by Admiral Viscount Jellicoe.

once made urgent remonstrances against the entirely insufficient allotment of supporting forces, and for this purpose placed Vice Admiral Beatty and his ships at Christian's disposal. How important this measure was, the outcome of the fights showed. The old and slow armored cruisers of Rear Admiral Christian did not actually take part in the fight. Whether the admiral with his ships had stood so far to eastward that the report of the *Strassburg* concerning an armored cruiser of the *Shannon* class could be explained thereby is doubtful. In the report it is only generally stated that he likewise had taken up a position in the west to catch enemy vessels driven in that direction. Not until 5.30 p. m. did he begin his advance to eastward to pick up returning light forces. In so doing the *Lurcher* was first sighted, along with three other destroyers. The *Lurcher* had been present at the sinking of the *Mainz* and going alongside the sinking ship had rescued 220 men, among them many wounded. The latter were now brought to the *Bacchante* and *Cressy*, which were returning to the Thames, while the *Amethyst* took the seriously damaged destroyer *Laurel* in tow. The latter had apparently already suffered in the battle with the *V–187*, and later in the attacks of the German cruisers, and had received five full hits. The commander was severely wounded, the forward gun put out of action, another hit had cut the main steam pipe, the aft funnel had all gone overboard, and also the detonation of our own ready ammunition had caused additional serious damage. In desperate defense it had fired all its ammunition but three charges when, finally, lying helpless on the water and in danger of being sent to the bottom or captured, it was rescued at the last minute from its critical situation only by the participation of its own cruisers.[6] Likewise the destroyer *Liberty*, after attack on a German cruiser, had been obliged to prematurely quit the battle. It was hit by at least three shells, one of which put the dynamo engine out of use, while another had passed through the funnel.

Meanwhile the *Arethusa*, too, had continued the trip back after the arrival of the battle cruisers with 14 destroyers of the Third and 9 destroyers of the First Flotilla. Afterwards, however, when its speed had gradually decreased to 6 nautical miles, the ship became entirely incapable of maneuvering. It had steam in only two boilers and had to ask for help. This was given by the armored cruiser *Hogne*, which took the vessel in tow at 10.30 p. m. and without mishap went back to the Thames, where, however, it did not arrive until August 29 at 6 p. m. With this the operations came to an end.

If one regards the operations restrospectively as a whole, then it stands out that without doubt they led to an English success. While the English had no ship or torpedo boat a total loss, on the German

[6] From an article in the Morning Post.

side both were entirely lost. Of these the loss of the *Cöln* and *Mainz* must have been felt very severely, for although it was not a question of the most modern German cruisers, still their loss, on account of the small number of our small cruisers and the slow increase in new constructions for the scouting service, was very soon felt. The damages to the other ships and boats on the German side was, however, slight, while those of the English cruisers *Arethusa* and *Fearless* and of the destroyers *Liberty*, *Laertes*, and *Laurel* were so considerable that only the prompt assistance from their supporting forces kept them from certainly being sunk. As a consequence the *Arethusa* immediately after entering port had to be put out of commission. On the other hand, the First Light Cruiser Squadron suffered only slight damages and mourned for no dead.

In correspondence with the ship losses, our personnel losses, too, were considerably higher than those of the English. With the *Cöln* alone we lost, besides the first leader of the torpedo boats, Rear Admiral Lebrecht Maass, 22 officers and 484 noncommissioned officers and men, and of the *Mainz* 12 officers and 336 men were taken prisoners; the total loss of the day gave, however, the following figures: Fallen, 712; wounded, 149; English captivity, 38; and, too, among the latter were many wounded. The details are contained in the following table:

Ship.	Officers.			Deck officers, ensigns, cadets.			Petty officers and men.		
	Dead.	Prisoners.	Wounded.	Dead.	Prisoners.	Wounded.	Dead.	Prisoners.	Wounded.
Ariadne	3	.....	2	.....	.....	3	61	.....	60
Cöln	22	.....	.....	17	.....	.....	467	.....	.....
Mainz	6	12	.....	9	5	.....	74	331	.....
Frauenlob	.....	.....	2	1	.....	.....	8	.....	26
Stettin	1	.....	1	1	.....	.....	2	.....	13
V–187	.....	3	.....	1	.....	.....	23	30	14
V–1	.....	.....	.....	.....	.....	.....	1	.....	2
T–33	.....	.....	.....	.....	.....	.....	2	.....	6
D–8	2	.....	1	.....	.....	.....	11	.....	19
Total	34	15	6	29	5	3	649	361	140

It gives the typical picture of how losses are distributed in naval engagements; that is, great excess in the number of the dead over the wounded and just as great a preponderance in the losses of the seamen personnel over that of the technical, very high percentage of dead and wounded officers, and finally frequent loss of the entire crew when the sinking of the vessel occurred. The number of the prisoners on August 28 was exceptionally large, as the enemy in rescuing the crew of the *Mainz* was not disturbed by the coming up of additional German forces.

The English losses were relatively slight in comparison with these figures, if the statements made above can make any claim to completeness. At the present time there are still contradictions in this. Thus in an article of the Navy and Army Illustrated, of November 7, 1914, a total of less than 70 men was given, while according to the Poldhn service, of September 1, there were 69 killed alone, and also from further reports of the *Arethusa* there were not less than 96 men wounded and 9 dead and on the *Laurel* 22 dead and wounded. Among others, the commander of the destroyer *Liberty* and the signal officer of Commodore Tyrwhitt had fallen. In view of the bitter German opposition in all individual fights and the unquestionably good gunnery performances, the slight English losses still need further explanation. They are partially due to the fact that the German ships and boats which had been in battle were often essentially older and were on the average considerably weaker armed than their opponents.

In German ship construction the predominant effort was to maintain the necessary equalization in weights, constructed at the expense of the magnitude of the gun caliber and indeed in favor of certainty of buoyancy and power of resistance as well as number of guns. To this end the requirement of the fleet in the case of small cruisers for the years 1909 to 1912 has been that the small cruisers must be able to ward off torpedo-boat attacks at night by simultaneously taking under fire two torpedo-boats of 1911. The desired and often discussed increase in caliber was put off and was not taken up, on account of further considerations, until the summer of 1912. Also the British Navy did not accomplish the change from 10.2 to 15 centimeters for small cruisers until the year 1910, and indeed with considerable increase in displacement and cost. The mixed armament of two 15-centimeters and ten 10.2-centimeter guns of the *Bristol* class (1909) was not copied because of the therewith connected artillery disadvantages. The simultaneous fire control for two different calibers proved to be unsuitable. The demands of the fleet for provisional retaining of the smaller caliber could be met all the more unobjectionably, as for the majority of all engagements a close tactical cooperation of small cruisers with battle cruisers was counted on. The fighting power of the stronger ships was to supplement the lesser one of the light forces.

For the choice of gun caliber of the torpedo boats this viewpoint was likewise sufficient. The torpedo boats were to use the torpedo by day against the enemy line under the protection of the artillery of the battleships and cruisers. A stronger artillery armament was made possible only by a considerable increase in displacement. From such was expected an influencing of the maneuvering qualities and thereby a diminution in the chances of night attack. In their con-

struction the torpedo boats were considered a special type for exclusive employment in the kinds of fighting named.

On the other hand, the British torpedo boat destroyers, as the name already indicates, were primarily built for combating enemy torpedo boats. When, therefore, on August 20 the German boats saw themselves alone and without protection of stronger armed ships opposed by enemy destroyers, naturally the great superiority of each individual English vessel as compared with each German immediately came into effect. Twenty to fifty per cent larger than the German boat of the same age, with three 10.2-centimeter 450 guns and a machine gun as compared with two 8.8-centimeter L/30 guns and four machine guns, the situation of the German boats in artillery battles was obviously unfavorable. The larger caliber enabled the English to shoot at longer ranges; on the other hand, the effect of the German 8.8-centimeter shells neither stopped nor sunk a destroyer. Besides being superior in speed, the English destroyers were such dangerous opponents that the German boats during the battles of this day were thrown on the protection of their cruisers without on their part being able to obtain results worth mentioning. Even the logical consequence of a one-sided development of the torpedo boat for night attack and mass attack on the enemy line by day being admitted, still, after the result of this day the apprehension was obvious, that in the case of defense from attack by German torpedo boats in battle by destroyers the former could hardly bring the torpedoes to the real goal—the enemy line.

It had also been pointed out that a single small cruiser could afford the boats only incomplete protection because it was too difficult to use the artillery with decisive effect against a greater number of destroyers; even the determination of the target was almost impossible in the first fight of the *Stettin*. Similar observations were probably made on the enemy side too. It was therefore necessary for both parties to equip the cruisers with special means for locating the target. Schemes were considered for the installation of electrical control plants which made it possible for the fire-control officer, directly from the fire station, to automatically bring all guns into the same side position.

The experiences of August 28 show for the rest that the English arms on this day did not succeed in causing the sinking of a single ship or boat directly by their effect. The *Mainz* was afloat about an hour after the torpedo hit and its armored deck, so far as has been established, was in no place penetrated; the *Ariadne* and *V–187* were only sunk by their own crews after opening sea valves, explosions, and similar means. On the other hand, one must admit that a greater injury to the opponent would have resulted if our cruisers, like those of the English, had been equipped with 15-centimeter,

instead of 10.5-centimeter and our torpedo boats with 10.5-centimeter instead of 8.8-centimeter guns. Only by the comparatively small gun caliber of our cruisers and torpedo boats is it to be explained that some enemy destroyers, even with six or more hits, as established in two cases by the first officer of the *Mainz*, escaped destruction. In two cases German shells, probably those with inside ignition, penetrated the bow and funnel of a destroyer without exploding. These cases were of course considerably more frequent in the case of English ammunition. According to the report of the *Strassburg* almost half the enemy shells did not detonate. The English 10.2-centimeter shells appeared on the average to be cast-iron shells with black powder filling and very slight explosive effect, their greatest shell weight as compared with the lighter German shells hardly appeared in the effect on the target.

The purpose of the English undertaking must be regarded in first line as a proof to public opinion of the battle preparedness of the English fleet, as hitherto the initiative had been openly that of the much weaker German fleet. Without deserting the principle of strategic defensive recognized as correct, an answer was to be made to the German cruiser, mine, and U-boat undertakings, which would afford proof of the fact that in the English Navy the famous old traditions still continued even if the changed conditions of modern naval warfare no longer permitted their taking up their traditional position directly off the enemy harbors. If they succeeded in enticing the German dreadnaughts out of their justly unpleasantly felt retention, and without risk to their own forces, to damage them primarily by the U-boats stationed for this purpose, then this would have still further corresponded to the expectations aroused. Considered as a trial undertaking, any failure must be avoided and the force used must be small. For this reason, therefore, a bombardment of German coast fortifications, in particular those of Helgoland, which was considered impregnable, did not enter. The undertaking was rather merely intended as a thunderlike surprise attack on the German outpost line, the positions of which previously had been thoroughly and successfully learned by U-boats. The means were suitable for the purpose. Using the tactical advantages which in such cases, especially, however, in naval warfare, are on the side of the attacking party, it had been possible to participate in all the individual engagements of the day with superior forces. Nevertheless the success of the day hung by a hair, for the German cruisers showed themselves equal to the superiority in a way by the alertness of their crews, the good training and performances of the officers, and the activity of the commanders. The attacks on the German outpost line nearly led to failure. The flagship of the English attacking forces, *Arethusa*, was seriously damaged in battle with the

much older and weaker-armed *Frauenlob* and nearly put out of action, while the opponent only succeeded in bagging a single torpedo boat of the outpost line. Furthermore the *Strassburg* and *Stralsund*, in battles with superior opponents, fought well. Finally the retreating opponents found themselves in the afternoon surrounded by the small German cruisers and their complete destruction was already imminent when in the nick of time and extraordinarily favored by chance the coming up of the battle cruisers and of the entire First Light Cruiser Squadron decided the day in England's favor.

It must be called tragic that it was exactly the German spirit of attack which here led to fatal consequences, for after the endangered outpost flotillas were already in safety our light cruisers should not have gone west; in this procedure lay the main error of the day. The responsibility for this rests less on the cruiser commanders, whose initiative and eagerness to attack can only be acknowledged. Even if the authorities directing the naval war prescribed an independent cruiser action, still those higher in authority ought to have set the limits which would stop the independent advance with consideration to the weather conditions and the decreased possibility, because of the low tide, of help from more powerful forces. The fleet did not take into account the fact that stronger forces were behind the opponents; on the contrary, the order to the *Mainz*, a detached cruiser, to attack the opponents in the rear shows how greatly they were deceived in regard to the strength of the opposition expected. According to the statements of the commander in chief of the fleet in his book on the conduct of the High Seas Fleet in the first half year of the war, he had assumed. as did likewise the commander of the scouting forces, that similarly to our procedure where the advances against the English coast had so far been carried out only with mine layers, small cruisers, and torpedo boats, so in this case, too, it was a question of light English forces only. In the first telegraphic battle report of the chief of the fleet to the Kaiser the heavy losses were attributed, besides the unfavorable condition of the weather, to the so long kept-down wish to fight and the untamable desire of Your Majesty's ships to get at the enemy. On the other hand, it must be emphasized that the cruiser commanders, once the pursuit had been started, acted correctly. When, however, in the thick weather they suddenly were opposed by superior force, an escape of our small cruisers in view of the superior speed of the battle cruisers was no longer possible.

In regard to an important factor in estimating the situation, the cruiser commanders had been left in the dark. Only the island of Helgoland had, at 11.30 a. m., sent a report concerning the slight visibility to the commander in chief of the fleet. By none of the

vessels at sea was the increasing bad condition of visibility and the coming of fog reported. As it was entirely clear in the river mouths, the command in this respect acted unconsciously and under false representations. Furthermore, the question has come up whether it would not have been suitable at about 9 a. m., when the fights northwest of Helgoland were in full progress, to have sent as a support the Third Squadron at least, which in contrast to the dreadnaughts was not hindered in sailing by obstacles to navigation. This squadron, even with as much expedition as possible, could not have arrived at 116 e, the center of the cruiser fights, with four ships until 2.30 p. m. But then it would have been as much of a surprise to the British battle cruisers as the small cruisers. The result of a fight between the most modern dreadnaughts and old battleships could, however, not be doubtful. The use of these ships would, perhaps, after severe damage to the opponents, have led to their destruction.

For the future the lesson was learned from the fights on August 28 that the outpost forces in the event of sighting superior enemy forces should immediately withdraw within gun range of Helgoland and into the river mouths, so that no further successes of the English against light forces would be possible. In the battle report of August 30 the commander in chief of the fleet expressed himself as follows:

> The invasion of enemy forces into the German Bight on August 28 represents a well-prepared undertaking with ample means. The attack was aided by the prevailing weather and the slight visibility to a great extent. It is to be assumed that the English U-boats, repeatedly observed since August 21, learned the positions of our patrol forces and that for the execution weather of limited visibility such as prevailed on this day was awaited. Also the presumed offensive spirit of the German fleet seemed to have been taken into account. From this the most important lesson for us to learn was that in similar undertakings of the enemy, however difficult it might be, our own forces should be withheld as far as possible, or the entire fleet should put to sea at once, possible losses through enemy U-boats being taken into the bargain. The enemy, if he came, would do so only with his most modern forces and with such a superiority that he would be unconditionally safe from a serious reverse.
>
> In the case of similar weather and visibility circumstances, we must reckon on the repetition of such or similar undertakings; our own measures must be so planned that the enemy superiority in such attacks should not be able to claim any victims before the decisive battle unless the nature of the undertaking demands a full insertion of force, as, for example, blockading the Jade, etc.

With the order for an immediate retreat of the outpost forces in the case of new attacks, however, the kernel of the matter was not hit, for without the possibility of the immediate insertion of dreadnaughts the danger of the rolling up of the outpost forces by faster and numerically superior enemy ships even in clear weather would exist as before. The error which lay in the employment of light forces comparatively far from their bases and at the same time holding back the dreadnaughts was not yet clearly recognized.

Interesting in this connection are the statements of some commanders of torpedo boats who had been in the battle on August 28. For instance, the chief of the First Torpedo-boat Half Flotilla, Lieut. Commander Tegtmeyer, expressed himself as follows:

> Disadvantageous for torpedo boats is the comparatively great distance of the outpost line from Helgoland as a base. Also the support for our own cruisers was first found close to Helgoland. These disadvantages must have been still more keenly felt where the weather was still more thick and the flotilla less fast. From the standpoint of the flotilla it was, therefore, suitable even by day to bring the outpost line closer to Helgoland and to hold the flotilla cruisers in readiness there.

A similar statement was made by the commander of the *G–9*, Lieut. Anschütz:

> It was by chance, we may say, that the First and Fifth Flotillas were on guard on this day and in the outpost line, the speed of these being comparatively equal to that of the English destroyers.

Another commander thought that with two or three cruisers on each flank of the outpost line it would have been an easy task to roll up the entire line of English cruisers and destroyers and considered such a reinforcement of the day and night protection as urgently necessary. The chief of the Fifth Flotilla went still further, asking for the armored cruisers as support for the outpost line. On the other hand, there is not, strange to say, in any war diary, not even in that of the squadron chief, an allusion to the fact that the individual measures of the day were less to blame for reverse suffered than the weakness of the system. That this, however, was actually the case the following consideration may show:

The outpost line could be still reenforced greatly by small cruisers and even by dreadnaughts; it would still be possible for the opponent, after previously learning the necessarily more or less schematic construction by U-boats, to appear against the outpost line at an exactly predetermined point with superior force before reenforcements could arrive. This view was also that of Von Pohl, the chief of the admiralty staff. He brought it up in conversation with the Kaiser on August 28, without, however, in the case of the fleet, effecting a change in the system. With an increase in the outpost forces it could not be done; it must also be limited by the number of ships available, the necessity of relieving them for replenishing of fuel, overhauling material, and rest for the crew. Against the employment of dreadnaughts in fixed outpost positions was, furthermore, the U-boat danger. The weakness clearly recognized by the opponent lay in the system itself. Connected with this was the fear that the "equalization of strength" in the event of the repetition of such attacks must gradually but surely turn to our disadvantage. It must therefore be investigated whether the effectiveness of the hitherto protection stood in any ratio to use of force and risk, or whether by other measures a pro-

tection could not be reached easier and more to the purpose. The first question must be answered in the negative; the second in the affirmative.

The protection system, as August 28 clearly showed, had not been able to prevent a penetration of enemy U-boats into the inner German Bight as far as the river mouths and thereby fulfilling their purpose in spite of a triple line of vessels. Besides, on account of the wide spaces between the singly placed torpedo boats, all resistance to even the weakest forces was lost. On the other hand, the fears for the event of the penetration of enemy U-boats as far as the river mouths had turned out to be exaggerated. In the construction of this organization the idea of a closer patrol of the German Bight by the enemy had unconsciously played a part. By some officials the arrival of English forces on August 28 was regarded as the beginning of a closer blockade. Afterwards, however, the views concerning the actual conduct of the English fleet and the extent of the U-boat danger had gradually emphasized that a fundamental change in the system of protecting the German Bight had to be inaugurated. The protection was no longer to extend over the range of the artillery of the bases and was accordingly left to the harbor defense forces. By this means a great saving of personnel and material, with considerably less risk, was secured. In place of the far-advanced outpost lines, mine barrages were used which caused the enemy losses, especially in U-boats, and were able to make him feel uncertain in his operations. The farther outside Helgoland these barrages lay the more surprise must they cause the enemy; while going around and avoiding these barrages was made easier for our own forces by certain measures of navigation.

Such barrages were also immediately proposed by the commander of the scouting forces, with the reason that the disadvantages which lay in the retention of our own forces were far outweighed by the advantages. The considerations hitherto made by the admiralty staff against such a measure, that it might influence unfavorably the freedom of motion of our own fleet, were only to the point as long as the expectation was held that the enemy would give battle close to Helgoland. However, when this expectation could no longer be entertained in view of the defensive attitude of the opponent, everything advocated protecting the deployment sector of our own fleet in Helgoland Bay by mine barrages. The fleet command therefore decided in favor of the proposal of the commander of the scouting forces; and after carrying out the necessary preliminary work, ordered the mines laid out in September at Helgoland, which matter will be discussed later.

According to the proposal of the commander of the scouting forces, airplanes, airships, and U-boats were to take over the survey of the

barrages as well as the long-distance scout work outside the gun range of the bases so as to report in time the approach of enemy forces. An establishment of a large number of U-boats in a permanent outlying U-boat line about 60 nautical miles distant, as the commander of the scouting forces suggested, would, of course, in view of the total number of U-boats, have greatly hindered the very desirable employment of them in the offensive.

By laying out mine barrages for the protection of the German Bight a considerable portion of the light surface forces were at the same time freed for other tasks. Instead of being laid out in fixed outpost lines, they could support by advances more than hitherto the long-distance scouting of airships and airplanes which must constantly change the extent, form, and composition of the forces. Besides, the torpedo-boat flotillas, by unexpected and quite irregular advances, could do much more to obstruct the stay of enemy U-boats in the inner German Bight than they had been able to do so far. The considerably greater fighting power of the latter in attack on massed forces offered, then, the possibility of immediate attack with sufficient means of harming the opponent during his retreat. In so doing better prospects were obtained of accomplishing the desired equalization of force than in the previous method. Only it was inadmissible. Not only small cruisers but also dreadnaughts must in such cases be at sea to cover the torpedo boats ready for immediate attack.

In this connection the following was to be considered: August 28 had shown that the English, if at all, came only with fast and powerful forces. If in the future, therefore, our own battle cruisers or a squadron of battleships were sent for the protection of our own outpost line at sea then at any time a battle of dreadnaughts might develop. Getting away from them would be difficult if damages had resulted. In such a case, however, an attack of other squadrons was unavoidable, and then a battle would take place perhaps under conditions which would be unfavorable to us or at a time that did not suit the wishes of our political leaders. In this idea lay the restrictions of German naval war direction, if the operation order for the conduct of naval war in the North Sea is recalled. They found expression in the thereby conditioned retention of the dreadnaughts.

The most serious disadvantage of August 28 lay, however, less in the material than in the psychological realm. On the small cruisers and torpedo boats the lack of support by heavy forces had been felt all the more bitterly as the power of resistance even of the older ships, their marksmanship as well as the training of the crews left it without doubt that granting only a somewhat more favorable form of the strength ratio the success would have been on the German side. That this was not the case the command was held responsible. Besides disillusion that was felt on the dreadnaughts at being

denied offensive action, there was the very depressing feeling that the defensive, too, was not conducted energetically enough. There was an inclination to value the losses incurred and therewith the English successes higher than they deserved. Instead of looking for the errors primarily in the organization of the protection system, these were often lost sight of within the fleet, deficiencies and omissions in details being pointed out and often exaggerated. These are all typical phenomena of the unfortunate outcome of the first meeting with the enemy. It required a certain time before these psychological consequences of the battle were overcome. Dominating all, however, was the consciousness that the crews of each individual vessel and torpedo boat stood the baptism of fire manfully and, when they were doomed to destruction, with heroic readiness for sacrifice. The readiness to attack of the German forces did not therefore suffer even under the impressions of August 28, as was shown by the attacks on the English coast in the next few months.

In this sense the sentiment of the crews also struck the commander in chief of the fleet when he reported to the Kaiser:

> As severe as was the loss, yet this first contact with the enemy furnished proof of the readiness to fight, tenacious endurance, and highest personal courage of all crews of Your Majesty's vessels and boats; the reliance in our own ability is not shaken but increased.

Also the men who had been under the heaviest enemy fire really knew only one wish and that was as soon as possible to get back at the enemy and to avenge the fallen comrades.

The description of the first serious meeting with the enemy in the North Sea can not be terminated without some details of significance being discussed which occurred in the different cases of sinkings, and indeed all the less so when in spite of repeated chivalrous behavior of the English and in spite of their recognition of the extraordinary German bravery, still the English then did not miss a chance to defame the opponent and when possible to deprecate him in the press of all the world.

For example, in the British report the attack of the *Stettin* after the sinking of the *V-187* was made the welcome occasion with complete misrepresentation of motives of putting the British in favorable contrast to the stated German disregard for the war usages of civilized nations for "the German cruiser fired at the destroyers while they, carrying out a work of charity, were devoting themselves to the rescue of the German crew!" How the situation appeared in reality will be clearly seen from the report of the commander of the *Stettin*, who suspected nothing of the rescue work of the English boats. It is obvious that the latter might have been as well engaged in rescuing a severely damaged vessel of their own, in which case the opportunity of further damaging the enemy ought not to be neglected. No sign

betrayed that the boats were occupied in the rescuing of survivors. In view of the short distance the *Stettin* was, as a consequence of the bad visibility, in considerable danger on recognizing enemy destroyers of being immediately torpedoed by the latter; furthermore as is admitted in the English report at the same instant the English U-boat *E-4* was actually engaged in attacking the cruiser, although it did not succeed.

The commander of the *Stettin* accordingly could not have acted differently; it was his duty to give battle as much as the unfortunate collision was regretted on the German side by which unknowingly a work of humanity was disturbed. Nevertheless, the British officer then in supreme command, Admiral Viscount Jellicoe, after almost five years had passed since the events and meanwhile a real comprehension could have been acquired, repeated this reproach in his book on the activity of the Grand Fleet, and opposes this case to the indubitably chivalrous behavior of Commodore Keyes in the rescue of the survivors of the *Mainz* with the statement:

As early in the war as this the difference in the behavior of British and German seamen was noteworthy.

Of the events during the sinking of the *Cöln*, there is likewise a German witness available. It may be uncomfortable for the English that a survivor of this ship can be summoned to contradict the report of Admiral Beatty in essential points and justify the strong complaint against the behavior of the English on this occasion. Beatty's report concerning the sinking of the *Cöln* runs literally as follows:

The *Lion* opened fire with two turrets and at 1.35 p. m. (English time) the *Cöln* sank after it had received two salvos.

The four destroyers convoying us were at once dispatched to rescue the survivors, but I deeply regret that they later reported that they searched the vicinity but had found nobody.

When, on August 30, among the numerous corpses drifting in life preserves of this ship a single survivor of the *Cöln*, the stoker Neumann was picked up, the following was learned:

The *Cöln* was rendered incapable of control by a hit in the engines when Neumann came on deck. Most of the officers, among them Rear Admiral Maass, Lieut. Von Seydlitz and Braun, had already fallen; the commander, Commander Meidinger, was very severely wounded. At the order, "Every man out of the ship," there were still about 250 men who collected on the quarter-deck, among them the senior engineer, Engineer Liepmann, of naval staff, the paymaster Gelbke, and some lieutenants. Three hurrahs were given and the Flag Song sung. Stoker Neumann continued literally in his statement as follows:

Then beginning with the chief stoker we took leave of the staff engineer. Then came the order, "Everybody off the ship." Thereupon we screwed up the ammunition boxes, threw the hammocks overboard, and then jumped off. When I had floated

about 100 meters from the ship a white cloud of smoke went up high from the bow and then from the poop; no report. First the forward end of the ship rose out of the water, then after the white cloud of smoke on the poop the rudder and propellers came out of the water. Finally the ship turned over to port and sank. The English ships remained on the spot until the sinking; made no attempts at rescue, then went away. The English might well have done rescue work, as a great number of men kept on the surface for several hours. On the next day I saw near me still about 60 men apparently alive. Then, one after another, these fell a victim to the sea.

Only by a second life preserver and a piece of cork was Neumann able to keep above water. Not until the day of rescue did he succeed, with five persons, among them the chief paymaster and a machinist, in getting hold of the shot-up ship's boat of the *Cöln*. Of these persons, however, one after another perished from hunger and exhaustion.

The real reasons for the at first incomprehensible behavior of the British destroyers are not contained in the official English, but they appear from the report of an English naval officer, inspiring confidence in others and of comradelike and human appeal, who with his own eyes saw the sinking of the *Cöln* from a destroyer. He writes as follows in this matter:

The *Cöln* was treated still worse than the *Mainz*. The entire ship was in flames and was completely unmanageable. But still the admirably brave crew did not wish to give up the fight. Only three guns were still usable and the vessel was changed into an almost complete wreck. However, the heroic German seamen refused in any case to lower the flag. After our cruisers had silenced the *Cöln's* guns they withdrew and sent the destroyers ahead to aid those on board. But then the German guns began to play against us again so that the *Lion* was obliged to sink our valiant enemy. This was to our great regret after such a brilliant defense against a manifold superiority. When the cruiser sank the *Lion* signalled us to hurry to the scene of battle and rescue as many as possible of the German crew. Just as we were ready to lower our boats into the water a U-boat appeared so that we were compelled to leave some poor devils to their fate. Had we remained, without doubt the U-boat would have sent us to the bottom.

It was incorrect to say that it was a question of only "some poor devils," for there were about 250 men, and it is further incorrect that a German U-boat was in the vicinity, for at this time all German U-boats lay in Helgoland. Nevertheless it is not necessary to assume that sighting the German U-boat was only a pretext for stopping the rescue of German survivors. Against this stands the stated recognition of German bravery. This reason is, however, lacking in the official report, and in place of it is a gross injustice in the obviously deceptive estimation, no witness being able any more to rise up against it. There is, however, evident from this how even then the branding of German war leadership, as compared with the stated humanity of German behavior, was counted as the most effective means for the enemy to conduct the war and how everything was avoided that would permit incidents that could testify against it reaching the public.

Only thus is it to be understood, too, that in the official English report, as well as in the public utterances of British representatives in neutral countries, the malevolent assertion was made that German officers had fired pistols at their own men, especially those floating in the water, to prevent them being picked up by the English rescue boats. In the Daily Chronicle, as an argument for this incomprehensible behavior, it was alleged that the German officers under the influence of the battle were no longer masters of their senses. English naval officers ostensibly supported the fact that several German seamen had been shot in this manner before their very eyes; also in the case of rescued men wounds of this kind were established. In what way, however, such wounds actually occurred the report of Lieut. Jasper concerning the events after the sinking of the *V–187* gives a quite different explanation. In this report it says as follows:

Several men were picked up by the British destroyers using lines and buoys. I myself, after I had swam a few minutes, was picked up by an English rowboat. The English rowboat had, besides, three more men of the crew of the *V–187* on board.

After waiting for a long time inactively between several floating men it finally went back on a signal from its destroyer. At this time a German cruiser opened fire on the destroyers. The English crew of the rowboat went on board its destroyer. I with my three men refused to go on board so as not to get into captivity. The English destroyer went on at high speed. An English seaman, apparently by error. loosened the bowline. A second English seaman saw how our rowboat was beginning to drift astern and threw a sharp shell into the boat. It lay there without exploding, Some revolver shots were fired at us without success.

With my English rowboat I picked up 16 more survivors.

Another English rowboat, under the guidance of an English officer, was likewise left behind by the destroyers. In it were Lieut. Braune, with several survivors.

After some time there came from the east a half-submerged English U-boat into our vicinity. It emerged completely and took the English crew of one rowboat and Lieut. Braune on board. At first I kept away from the U-boat and took off my jacket, so as not to be recognized as an officer and taken prisoner. Then the U-boat came near me and asked if there were Englishmen or officers on board. We gave no answer. The U-boat, which forward on the bow had the designation E–4, dived and disappeared to the west.

Still another English boat came up to me in which there were still five survivors of the *V–187*.

I assume that 10 to 20 survivors of English destroyers were picked up. The rest of the crew, 20 to 30 men, dead or severely wounded, were carried down on the boat completely shot to pieces in square 133 e. * * *

I would like to praise especially the behavior of torpedo seamen Kleemann and Klöster. They were picked up by a destroyer, but when the German cruiser came near jumped overboard under the violent pistol fire of the English and so escaped captivity.

This account gives quite a different picture of the conduct of German officers and men. We see from it with admiration that the latter up to the last, in spite of danger from pistol shots and by risking their lives, resisted captivity with might and main and partially succeeded, too.

At that time on the German side the British slanders seemed incomprehensible; their purpose could not be explained. Now after the accompanying phenomena of the German collapse all these individual endeavors to drive a wedge between the German officers and men must be evaluated quite differently, and we recognize with astonishment how early the conscious work of our opponents in this direction was begun in the press. As a typical document of moral depravity and the manner in which this poisoning was already conducted at the beginning of the war, there has been added in Appendices 20 a and b an article from the Daily Mail of September 11, 1914, concerning events during the battle on board the *Mainz*. The best reputation of the obvious slandering of the spirit of the German ship crews there ought to be perhaps the account of the sinking of the *Mainz* by an English naval officer who gave his impressions, in a press report, as follows:

The *Mainz* was extraordinarily brave; the last that I saw of her was a complete wreck, in the middle a smoking hell out of which forward and aft a gun kept firing in spite of all the death and destruction. *She made one think of a wild cat made crazy by wounds.*

The report speaks volumes. No ship's crew fights thus which can only be held by the pistols of the officer to the fulfillment of duty.

Nevertheless the concerted nature of such slanders was not then recognized by us. For when, among other things, this article became known to the admiralty staff and was considered there, to be placed at the disposal of our own press so as to show by what means of falsehood the opponent was working, the then chief of the admiralty staff, Admiral von Pohl, wrote in this connection: "Why? Don't pay any attention!"

This "don't pay any attention" to this falsehood campaign conducted against us by the press of all the world with all the means of psychology was finally one of the causes of the inside decomposition.

How these misrepresentations were in contradiction in reality to the relations between officers and men on the German side, where all vied with one another in works of compassion, is best shown from the events during the sinking of the *Ariadne*. Therefore in conclusion let some words be said on this subject. The commander of the *Danzig*, from his own observation, reported as follows in this connection:

Lieut. Garmich, of the *Danzig*, went alongside the forward end of the ship and was the first to climb by a hanging rope onto the forecastle. Seaman Graul, of the *Danzig*, followed him, and a machinist's mate of the *Ariadne* who had been picked up out of the water. The name of the mate I have forgotten.

Having reached the forecastle, the three rescued the severely wounded, making them fast to lines and lowering them into the boat. Lieut. Garnich previously cut off with a knife the leg of a severely wounded man which was hanging only by flesh and shreds of skin, as otherwise the wounded man could not have been transported.

All three rescuers were in the greatest mortal danger, as under the forecastle it was burning fiercely and continually explosions took place.

The resoluteness shown and readiness to make sacrifices deserve, in my opinion, special recognition.

The behavior of the *Ariadne's* crew was splendid. When the *Danzig* came alongside to assist, everything was on fire in the lower compartments of the wrecked ship. Continual explosions of ammunition threw out long flames, pieces of explosive, and splinters in all directions.

Most of the crew stood or lay wounded on the forecastle. Others, including many wounded, were on the middle deck. The commander stood with other officers and some men of the signal personnel on the bridge and remained there until the last.

Bridge, forecastle, and port middle deck appeared to be the only places where a stay was possible.

On the arrival of the *Danzig* the men gave three cheers and sang the Flag Song. According to the statement of the rescued, the commander made a speech at this time.

Also after the rescue the conduct of the men was excellent. Those frightfully wounded behaved magnificently; no cries, no complaint, but occasional groaning. The spirit among the rescued was very good, almost contented, and only the desire for immediate rest was expressed.

The helmsman of the *Ariadne*, at the order of his commander, brought his soaking wet chart up to the bridge so that a report could be sent of an enemy U-boat which the *Ariadne* had sighted shortly before but had no longer been able to report.

Finally I might mention that the crew of the *Danzig* carried out the rescue work rapidly and without hesitation, although the men were completely aware of the danger in which they were placed by the hail of explosive fragments from the *Ariadne*, on the one hand, and the proximity of the enemy armored cruisers and U-boats, on the other.

This account is confirmed by the report of the commander of the *Ariadne*. After naming 18 of the crew who had distinguished themselves, he concludes as follows:

Of the officers who throughout did their duty with the greatest composure and care I would like to especially mention the adjutant, Lieut. Zimmermann (j. g.), who remained with me up to the last on the bridge, and the torpedo officer, Lieut. Besserer (j. g.), who left the ship with me and Lieut. Zimmermann last of all, after he had conducted with great care the transferring of the wounded. Finally, also Lieut. Westermann, reserve, who, although slightly wounded, went back on board the burning vessel to rescue survivors.

The flag lieutenant of the Harbor Flotilla, Lieut. Brunswig, jumped overboard and rescued a sinking machinist.

As the English report has slandered the comradelike spirit of the German officers and men, these events had to be described in detail.

Taken as a whole they furnished proof of the heroic, self-sacrificing spirit of the cruiser and torpedo crews of the High Seas Fleet, which spirit was typical of all other fights in the North Sea and finally led to the victory of the Skagerrak. This was the most important gain from the battles of August 28.

UNITED STATES OF AMERICA'S SHIPPING AND FOREIGN SHIPPING COMPETITION.

Source: Translation—Dagens Nyheter.

(12510-B.)

9 June, 1921.

Mr. A. R. Nordvall, who for several years thoroughly studied economic conditions in the United States and the American endeavor to insure a privileged position for American shipping as a safeguard against an apprehended overwhelming competition, expounds in the following measures taken in this connection, adding the interesting information that the Americans themselves now realize that the militant measures planned will only lead to other nations adopting a system of retaliation and, therefore, will forfeit the end to be obtained, the known author of the Jones bill himself having introduced a bill repealing the income tax on foreign shipowners. Mr. Nordvall writes:

A few days ago I received a telegram from New York reading: "Senator Jones yesterday offered a bill to repeal the income tax on foreign shipowners."

As this bill, offered by a man as versed in shipping questions and as influential as Senator Jones, the author of another marine law, the so-called Jones bill, is of extraordinary consequence to the shipping of all the world, not least to Swedish shipping, I am glad to respond to the Degans Nyheter's invitation to outline to its readers the present American shipping policy and the measure taken to bring it more into harmony with that of other countries. I studied this question rather closely during my last visit to America and have ever since been closely watching the situation and its further development.

In the preface of the merchant marine act, 1920 (the so-called Jones bill), it is pointed out that "it is necessary for the national defense and for the proper growth of its foreign and domestic commerce that the United States shall have a mercantile marine of the best equipped and most suitable types of vessels, sufficient to carry the greater portion of its commerce."

Prior to the outbreak of the war America had a mercantile marine carrying 90 per cent of her foreign commerce and playing an important part in the international intercourse. The bulk of America's population living on the Atlantic coast in earlier times, an interest for the shipping was naturally fostered in the Americans. As the assets of the interior of the country became known and appreciated, the population migrated to the interior, and as a result an interest arose in the development of the railways as a means conducive to the utilization of these assets. American savings were to a large extent used for the further development of the railways, and since these savings did not nearly suffice, Europe, and England in particular, were called upon to stand as creditors to the American railways. It was not until after the outbreak of the World War that America was able to refund the foreign capital and enter into full possession of her vast railways.

In the meantime other nations seized the trade between Europe and America as well as that between North and South America and other foreign countries.

As America's wealth and economic importance increased the question as to the creation of an American mercantile marine became more pressing, but the efforts made from time to time to realize projects toward that end showed that it was exceedingly difficult and even impossible for American shipowners to hold their own

against European shipping nations which countenanced their shipping by applying a system of substitutes and subventives. Such a system being incompatible with American principles, and, moreover, not being permitted under the American Constitution, American steamship companies which from time to time took up the competition with European and Japanese shipping companies were outrivaled by these in the odd contest. It took a world war for America to recover her old position as a leading shipping country. During the World War, especially during the period America was neutral, she was made to realize by painful experiences what it meant for a big nation to depend on foreign tonnage for her commerce. America's experiences during the war taught her that in the event of America being involved in another world war important military reasons made it necessary for her to have a mercantile marine at her sole disposal. However, whether America be involved or not in a future war, there exist important commercial reasons why the bulk of America's foreign trade should be carried on American vessels. The international conflict now concluded showed with every desired plainness that during a war a shipowning nation is in a position to decide what may and what may not be shipped on vessels under its control, a state of things which often equally affects a belligerent and a neutral country and may prove detrimental in an irreparable degree to the latter. Experience has demonstrated that even at war belligerent countries are able to uphold their commercial interests also in regard to friends and allies.

It was experiences of this order that caused America, with her usual resoluteness and energy and without a thought of the costs, in the worst heat of the war, to resolve on the creation of a mercantile marine meeting the requirements of the country; and to-day America has at her disposal a tonnage surpassed only in some measure by the British. It cost the American nation 3 billion dollars to build this navy, with 200 additional millions invested in shipyards.

The position America thus secured for herself in the world trade she has no intention to give up. Although fully aware of the severe competition the new-created mercantile marine has to contend with at the hands of nations who created a large and strong marine under conditions more favorable and by willful work consolidated the position of this marine in the world, and convinced of the fact that these rivals, by every means possible, will seek to outdo the younger rival, the American legislators, in an endeavor to protect this property so precious to the country in more than one sense, devised some safeguarding measures of which the following attracted special attention in Europe, inclusive of our country.

(1) The revenue act of 1918, ruling that foreign firms or companies operating steamship lines in America shall be subject to taxation in America for proceeds derived from America (freights, etc.).

(2) The merchant marine act of 1920 (the so-called Jones bill) designated to benefit America by—

(*a*) Encouraging capital to invest in American shipping by affording the largest possible amount of protection, through legislation, to investments in vessels;

(*b*) Enabling America, when necessary, to levy on some country's or countries' vessels in trade on United States of America such fees and duties as may be deemed necessary to protect American tonnage in international trade; also affording a preferential status to American vessels consisting in facilities, reduction of railway rates, and others, for merchandise shipped to and from America on vessels under American registry.

(*c*) Exempting American tonnage passing through the Panama Canal from obligation to pay fees.

In a following article I shall discuss further the two last points. In the present article I shall confine myself to the first point dealing with the revenue act of 1918, taxing vessels under foreign registry.

As I said, the regulations of this law merely affects vessels in regular trade on America, while steamships in common freight trade (so-called tramps) are exempt from taxes under the Treasury's amplification of the law. The motive impelling the law is plain. It is to prevent American shipping companies subject to heavy taxes in America from being placed in an economic position inferior to that of a foreign shipping company whose country taxes its shipping in a smaller degree than is the case in America. That this law will prove quite a burden to foreign shipping companies, already taxed to the utmost of their capacity in their own countries, goes without saying, and that is the reason why this law produced such general discontent and raised such opposition among the representatives of foreign shipping, especially in England and the Scandinavian countries. The American measures to protect the American mercantile marine are criticized from a British point of view in the well-known British periodical Fairplay. "These proposals," Fairplay writes, "together with the action shutting out British ships from American coastwise trade, are undoubtedly due to a desire to help American shipowners to establish themselves in various trades on and from America and to enable them under the most favorable conditions possible to compete with foreign tonnage. Although foreign nations have no say in this matter, parties concerned should realize that the nations affected by these measures are at liberty to take such measures as are required to protect their own interests. What we should and must do is to inform the American President, or some other authority concerned, that while we fully recognize America's right and competence to do what she has done in this matter, we must feel that we ourselves have similar rights; and unless the disabilities to which British ships are subject or will be subject in the United States are withdrawn, we shall be compelled to adopt similar regulations restricting in a larger degree also American tonnage calling at British ports."

Similar views have been expressed in Scandinavian shipping circles, and I believe I can say that Swedish shipping companies are now seriously considering the question as to what action should be adopted by Swedish authorities to protect Swedish shipping by subjecting American tonnage calling at Swedish ports to restrictions similar to those at which Swedish tonnage is subjected to in America.

That such a course leads us to the dangers of a policy of retaliation is obvious, and that influential men in America are aware of the danger inherent to this policy to the peace of the world and the good will between the nations was made clear to me during my stay in America at the end of last year. Action has therefore been taken to bring this home to the authorities and legislators concerned in America.

My American friends who advocate a revision of the law taxing foreign tonnage base their views on the following facts:

(1) European States do not at present tax foreign shipowners for incomes proceeding from countries to which they have carried freights. Consequently the United States in applying the next taxation law would depart from general practices.

(2) The law affecting such companies only as have established regular lines compels them to pay income tax on all income derived from American trade operated by liners and tramps alike. On the other hand, companies whose vessels consist solely of tramps are exempt from taxes, the result being that the companies having liners will transfer their tramps to special companies to evade the tax.

(3) The taxation burden will prove excessive for foreign shipowners, as taxes paid in the United States can not be deducted from the amount on which they are taxed in their own countries, on the ground that the taxes in the United States are fixed at too late a date, so that they will already have paid their taxes at home.

(4) The difficulty for a foreign company to make up their taxation returns in the United States of America under the complicated and difficult regulations in force there makes it necessary for them to engage special American auditors and lawyers.

(5) In the last instance the American exporter and importer will have to pay the tax, as, naturally, the amount paid in taxes will be added to the freight rates charged.

(6) The European States, as a matter of course, will retaliate by levying similar taxes on American steamship companies abroad, with all the work and cost this entails. The inference being that America will have to pay the equivalent or more in taxes to foreign countries than she derives from taxes paid by these countries. Then we shall have done all this work and gone to all this trouble for no use at a time when good will and friendly cooperation between the nations is more imperative than ever; we shall have evoked a policy of retribution of an extremely dangerous kind.

It is therefore of utmost importance that the United States modify this law at the earliest possible time before other countries have been compelled to create similar laws.

American circles particularly interested in this question have suggested the passage of a new bill under which the American shipping is supported and promoted by provisions safeguarding American tonnage against foreign taxation by exempting foreign tonnage from taxation in America. The revenue act would in that case remain in its original form, with an amendment attached repealing the effects of the first law in regard to such nations as give America similar privileges.

There is no doubt whatsoever that a policy of this kind would protect the American mercantile marine in a much more effectual manner than the original law would.

The aforementioned telegrams which recently reached me from New York indicate that the author of the Jones bill, the Senator so influential in naval circles, decided to introduce this new act into Congress, and appearances are that this measure will afford the solution of this question so necessary to all parties; nay, to the world as a whole. Judging by reports, the Shipping Board is also adopting a more favorable attitude toward a policy of friendly agreement with other maritime nations for a common shipping policy, as they realize that such a solution is the necessary foundation for real peace in the world and is, as an American of prominence recently observed, "worth any number of battleships."

The international shipping policy will be discussed at the meeting of the international chambers of commerce in London by the end of this month, in which Sweden is also represented. It seems to be of utmost importance that on that occasion Sweden does not fail to assert herself.

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NAVY DEPARTMENT.
Washington, D. C.

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In general: Bureaus of the Navy Department; all force commanders; all commanding officers of capital ships, the larger patrols, destroyers, and submarines.

GENERAL ARRANGEMENT.

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FOR CONVENIENCE IN ROUTING.

Officer.	Initials.	Date received.	Date forwarded.
Captain			
Executive Officer			
First Lieutenant			
Navigating Officer			
Gunnery Officer			
Communication Officer			
Engineer Officer			
Medical Officer			
Supply Officer			
First Division Officer			
Second Division Officer			
Third Division Officer			
Fourth Division Officer			
Fifth Division Officer			
Marine Officer			

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ACCIDENT TO THE "R–36" AT PULHAM ON JUNE 21, 1921, DURING MOORING OPERATIONS.

Source: Reliable.

(5799.)

12 July, 1921.

On June 21, 1921, when *R–36* was returning to Pulham, the ship was damaged during the mooring operations. She was being brought in for normal mast landing and the ship's wire was dropped and shackled to the mast wire. The wire fouled the automobile winch near the foot of the mast, overturning it, and the ship overran the mast and brought up all standing on the wire. This was probably due to the pilot having too much headway in making the landing. The great stress on the wire due to this surging effect bent the bow of the ship downward from the bow to No. 2 main frame, fracturing some of the longitudinals and causing damage to gas bags Nos. 1 and 2, so that they became deflated. The mooring wire did not carry away and they finally succeeded in hauling the ship down.

It was apparent that the ship in a damaged condition should be put in the shed rather than remain at the mast: as there was not available berth in the shed at Pulham, and as it appeared impracticable to fly the ship to Howden in the damaged condition, it was considered necessary to dismantle *L–64* in the Pulham shed and pull her out piecemeal. The net results, so far as *L–64* is concerned, are that she is completely dismantled and practically a wreck.

As soon as *L–64* was out of the shed, *36* was started in. During these operations a handling guy carried away the ship, crashed against the shed door, which resulted in crushing a great many of the longitudinals between the two midship frames.

So far as can be ascertained the air ministry has not put repairs underway on *36* on account of lack of funds and the generally unsettled status of airships in Great Britain at the present time. As a result of damage to *36*, *R–33* was immediately placed in commission, and has been doing considerable flying ever since.

Investigation indicates that the real cause of the damage done to *R–36* at the mooring mast was primarily on account of the inability to surge the mooring line winch. As the department is aware, the mooring mast equipment, especially handling equipment, is of the homemade kitchen variety. If the mooring wire could have been paid out as the ship passed over the mast, there appears to be no doubt that no undue strain would have occurred. The general

opinion appears to be that this accident is the result of a penny-wise, pound-foolish policy, as the cost of proper handling equipment for this mooring mast would be very small.

This office has delayed submitting the information relative to these accidents owing to the fact that there was a great reluctance on the part of the air ministry officials to give out any data with regard thereto.

The above report has been compiled after conference with Commander Maxfield, who, although he has not been at Pulham to see the actual damage done, has obtained sufficient information to check the general accuracy for the foregoing report.

H. M. S. "RALEIGH"—VISIT TO AND INSPECTION THEREOF.

Source: Reliable.

(7323.)

22 July, 1921.

1. H. M. S. *Raleigh* will leave England for the American station some time in August, to become the flagship of Admiral Pakenham. A few days ago an opportunity was presented to visit this ship. The installation of the 7.5 guns proved particularly interesting. On the main deck these guns are installed in sunken wells and are amply protected by shields from the weather. The gun revolves in the well and is operated by the usual swash-plate motors. The gun is ranged for 22,000 yards and fires a projectile weighing 200 pounds. The 3-inch guns (except A. A.) have been removed from this ship. Rounds-fire indicators are used and are located in much the same position on the guns as in our service. These indicators are much more crudely made than our own and consist of an exposed ratchet-and-pawl arrangement. Connected with this instrument, which notes the rounds fired, is the ordinary time-of-flight hooter. When the gun is fired, the mechanism is started which, at the expiration of the given time of flight, causes the hooter to automatically sound at all stations. The searchlights, except signal lights, have been removed from the bridge and placed aft along the smokestack. Despite the lessons learned from the war, these searchlights were originally placed on the bridge. There are two control stations, one forward and one on a platform just forward of the mainmast. Either station can control groups either forward or aft, but not individual control. The two waist guns, I believe, can be thrown with either group. The lower ammunition hoists are of the dredger type.

2. Deck (above water) torpedo tubes are fitted. Torpedoes are fired through ports in the side of the ship. These ports are normally closed. Ship is fitted with latest mark torpedoes. No opportunity

was offered to observe submerged tubes. For deck tubes only one spare torpedo (slung over tubes) for each side is carried. The ship has the latest appliances for fire control and ship's control. Due to the coal strike, commissioning has been greatly delayed. This has permitted a very close inspection of the entire ship, and complete tests have been made, supervised by the ship's officers. The ship should leave Devonport in excellent condition. Capt. Bromley, who is in command of the *Raleigh*, takes a great interest in making his men comfortable and has seen to it that many things have been added to the ship to facilitate this end.

NOTES ON VISIT TO ADMIRALTY DOCKYARD, DEVONPORT.

Source: Reliable.

(4999.)

July 22, 1921.

Two representatives of this office recently visited the Admiralty dockyard, Devonport, on the invitation of the commander in chief of Plymouth station. The following notes are submitted as a result of this visit:

(*a*) Considerable disappointment was noted in the dockyard as a result of the Government's decision not to build one of the four capital ships called for in the naval estimates. The Government's decision was based on the fact that a great deal of money would be required to extend the building slip in order to accommodate the size of the capital ship proposed.

(*b*) The tanker which the Government authorized to build at Devonport is about 70 to 80 per cent completed, and the workmanship appeared to be first class in every respect. The general finish of the vessel is somewhat superior to that originally found in private shipyards on this type of vessel. It is understood that the cost of construction is likely to be very high: the dockyard authorities were very reticent about this matter.

(*c*) A casual inspection was made of naval vessels assigned to this station, and the remarkable number of vessels on the disposal list at anchor in the waters adjacent to the yard was very noticeable. There is attached to this report a printed copy of the "Mount Wise Report," 2d July, 1921, indicating the vessels at Devonport and giving general information relative to their status; particular attention is invited to the vessels on the disposal list.

(*d*) The H. M. S. *Raleigh*, which is now practically completed, was inspected: the general features of construction of this class of cruiser were furnished to the department during the war, so no

attempt will be made to repeat them. The boat stowage arrangements were criticized by the officers concerned, as it is believed that their stowage is so low that there may be difficulties encountered in heavy weather. A ship's laundry has been installed, which is an installation adopted from our service. An apparatus for carbonizing fresh water was noted, this having been installed for the purpose of making "soda water." The arrangements on the navigating bridge were particularly satisfactory to the ship's officers, and the height of this bridge above the water line, its distance from the bow of the ship, and the sheltering features were noted. A particularly noticeable feature in connection with the construction of the *Raleigh* is the method of carrying the strength of the forecastle deck to the main deck. In the *Raleigh* class of cruisers, the forecastle deck is the strength deck. This strength is carried down to the main deck from the break of the forecastle deck aft by means of a very heavy stringer plate about 4 inches in thickness and about 3½ feet wide. It is carried down in an easy curve with box-girder construction underneath. The ship's force has utilized this construction to form a walk way from the quarter deck aft to the upper deck.

(*e*) A long distance view was obtained of the airplane carrier *Hermes*, which is about 70 to 80 per cent completed. Investigation indicates that this ship will probably not be completed and go into commission until May or June, 1922. Apparently, there is no haste in completing the vessel, and while work is under way, progress is very slow. The flying deck is flat throughout, with a considerable sheer and an extremely noticeable flare forward. It is understood that the "island installation" will be made on the *Hermes* generally similar to the installation on the *Eagle*.

WIRE-WOUND GUNS.

Source: Reliable.

(14706.)

30 June, 1921.

The well-known French engineer, Gustav Conet, ordnance director of Schneider & Co., Le Croisot, delivered an address on "Some comparisons between French and English artillery" on 18 November, 1907, before the Junior Institution of Engineers. In the main, this address contained description of the known English and French gun construction.

To be specifically noted were his comments on the English construction, the greatest fundamental faults of which were characterised as the wire winding and the thin inner tube. According to Conet, the wire winding is only a necessary construction in cases where homogeneous steel castings in large sizes are not obtainable. The fact that the English used a thin-walled inner tube for easy re-

newal on account of the highly erosive action of their gunpowder was condemned by Conet on the grounds of strength requirements. The following pertinent remarks of Conet on this subject are given:

The English construction differs from the French construction principally in the wire construction and the use of the removable thin inner tube. Other points of difference are of minor importance.

When I was young and still possessed of a certain respect for mathematical formulas, I was a preponent of wire winding, because without doubt, from a mathematical standpoint, the wire construction is the most perfect solution where the problem of resistence to the inner tube pressure alone is considered. But more than 30 years' experience have proven to me that the actual requirements differ considerably from the mathematical. In spite of this, however, I would still advocate the wire construction to-day if the steel casting of to-day were as inhomogeneous and unreliable as they formerly were. But the science of metallurgy has been so much improved that it is now possible to obtain such good steel castings with the necessary strength and elasticity that the wire construction is held to be unnecessary.

Further, the use of the thin-walled inner tube is opposed. The high pressure of the hot gases has the tendency to split the tube. In addition to this, further stresses are set up by the unequal expansion due to heating of the various parts of the tube. In order for the stresses in the tube reaching the elastic limit, a certain amount of time is necessary. If the expanding pressure ceases before this the tube will not be split, even though this same force applied continuously would be sufficient to split the tube. In a gun, however, the gas pressure only continues for a short interval of the time. If sufficient metal is present to receive the shock, then the short length of time during which the pressure lasts will not permit the stresses to reach the point of rupture before the load ceases. In the first place, a sufficient mass of metal is necessary to withstand the shock, from which it follows that the inner tube is not necessary, but is in danger of rupture. One can compare the thin inner tube with a thin metal plate laid on an anvil to protect the latter. The anvil has sufficient strength to withstand the blow, but the thin plate will be broken.

The inner tube is supported by the outer "A" tube, but, even with the most careful construction, there is certain to be a small space between the inner and outer tubes. In that case the outer tube acts as an anvil for the inner tube, whereas if both were a homogeneous part, they would absorb the shock together.

The danger of rupture of the inner tube is increased by the unequal expansion, which is caused by the overheating of the various jackets. The infinitesimal space between the individual tubes prevents the rapid heat transfer from inner to outer tube, so that sharply divided temperature differences exist between the two. The result of this is the unequal expansion of the two tubes, which, under some circumstances, causes the crushing or rupture of the weaker inner tube. This is the only explanation of the known cases of rupture of the inner tubes.

The unequal expansion resulting where two tubes are placed together in this manner has been observed by me in the cases of quite a few test guns consisting of thick inner tubes and long shrunken jackets to the inner tube to the veer relative to the jacket.

The breach was attached to the inner tube. On firing, the gas pressure acting on the breach had the tendency to move the inner tube to the rear relative to the jacket. At the same time the inner tube experienced a greater expansion than the jacket owing to the heat, and on cooling off the contraction

of the inner tube pushed it forward relative to the jacket, so that clearance resulted at the shoulder—this, in spite of the tremendous frictional resistance. The shrinkage in that case was as good as could possibly be obtained.

My experiences, therefore, that the taking into consideration the high quality of present-day gun steel, the guns should be built with as few parts as possible. The inner tube should be as thick and heavy as is essential for reliability, while the jacket should be shrunk on the breech end, the latter having a cross-sectioned area, which approaches closely that of the inner tube at every point. Further, a thin jacket, drawn over the whole, should serve as protection against shrapnel and small arms. A thin inner tube or liner should only be used as replacement when the walls of the inner tube are reduced by erosion.

In order to illustrate the resistance of an experimental gun constructed on this principle, I will report on a 12-cm. gun, built and tested at Havre:

By accident, in one case, the powder chamber was fitted with 10594-cm. field artillery powder. The force of the explosion was so great that the threads of the breech were completely torn off, and the breechblock was blown to the rear. The stamp of the pressure gauge (crusher gauge) was driven completely through the copper cylinder, so that the copper took a ring form. In spite of the terrific pressure the tube was undamaged, and after the addition of a new breechblock is serviceable to-day, without showing any faults.

ABSTRACT AND COMMENTS ON THE WAR DIARY OF "U–155," LIEUT. MEUSEL IN COMMAND. UNDERTAKING OF 23 MAY TO 5 SEPTEMBER 1917.

Source: Reliable.

February, 1918.

May 23: Ran out from Kiel through the Sound to the north Atlantic Ocean for the long-distance undertaking.

May 24: Passed the Sound, accompanied by *V–160* and later by *Odin*. *V–160* operated very cleverly in preventing the *U–155* from being sighted by neutral vessels. In Lillgrunds Rinne the *U–155* scraped bottom, but only very slightly.

May 25: At 1 a. m. navigated unseen to the north of Malmœ through a Swedish torpedo-boat flotilla with cruisers engaged in torpedo shooting.

4 p. m., damaged the driving motor of the main compressor.

May 26: Steered through Skagerrak, along the Norwegian coast, in the hope of being able to attack the convoy train that (according to information from the Admiralty staff) gathers at Lindenes. In the Skagen Arendal line a row of fishing steamers, which was halted under the impression that it was a line of patrols. As the nearest fishing steamers signaled with their steam whistles these two were halted. As their papers were in order, allowed to go.

Vessels were ascertained to be the Swedish fishing steamers *Alexander* and *Guernsey*.

The commander decides to steer northwards between the Shetland Islands and the Faroe Islands.

May 27: At 8 a. m., breakage of the starboard Diesel motor (exhaust valve of the second cylinder broken). As it is not possible to judge of the amount of time necessary for executing the repair and as the charging of the battery with one motor consumes much time, in addition to the consumption of current for lighting, cooking and heating, great economy is necessary in order to have a reserve sufficient for diving. Therefore instead of taking the route through guarded zone, it is decided to pass north of the Faroe Islands.

5.30 p. m., meeting with *U–19*, Lieut. (junior grade) Spiess in command. Exchange of information.

May 28: On account of heavy patrols along the Norwegian coast, according to statement of *U–19*, continued journey, running awash in hazy weather.

6.55 a. m., emergency submerging to depth of 45 meters at sighting a periscope.

7.10, water bomb close to the boat which stands it well, remaining thoroughly water-tight. Later two more explosions farther off.

12.30 noon, emerged. While emerging water pours through the main air shaft into the Diesel engine room. Not yet possible to ascertain cause, as boat is still running awash. *Most likely the air shaft was crushed when diving to 45 meters, and this occurrence was mistaken for the water bomb (as was also observed in the cases of "U–156" and "U–157").*

May 29: Starboard Diesel engine again in order. 1 a. m.—Emergency submerging at sight of supposed U-boat.

6 p. m., column of smoke in sight. Started under-water attack; unarmed neutral steamer. Halted it by gunfire: Dutch steamer *Arundo*, 3,193 tons, cargo 177,765 bushels of grain for Dutch Government from Philadelphia to Rotterdam. Allowed steamer to go.

Ascertained damage to main air shaft.

2.14 p. m., two steamers sighted in quick succession, one on the starboard side and one on the port side at a distance of about 90 hm. Halted same by gunfire. The *U–155* runs a zigzag course between them, controlling the distance by means of the Bg. (probably bow gun).

First steamer, Dutch steamer *Bali*, water ballast from Amsterdam to Sandy Hook, is going for grain for the Dutch Government.

Third steamer, Dutch steamer *Texel*, 3,210 tons, as above. Allowed steamer to go.

Second steamer, Dutch steamer *Besocki*, 3,778 tons, from Rotterdam to Halifax; for the rest as above.

7 p. m., the faces of one machinist's mate and one sailor were slightly burned as a result of the accidental discharge of the aft 15-cm. gun.

As it was seen from the charts of the steamers that the neutral steamer route runs westwards at 63° N. of the Faroe Islands, I steered first in that direction in order to journey westwards along this route also.

May 31: Passed Danish steamer *Vesta*, without cargo, from Iceland bound for Faroe Islands.

June 1: Strong, high sea with south wind. Sighted two steamers running well without smoke and for this reason not seen until late; passed. Not halted on account of distance and weather. Own speed 2 to 3 knots.

Experience hitherto with the machinery has shown that the electric-power consumption requires charging of the electric battery every three to four hours, not including diving and submerged travel.

9.40 p. m., emergency diving at sight of auxiliary cruising with 3 smokestacks, 2 masts, type *Empress of Russia*. Heavy sea makes employment of weapons impossible. Can not approach cruiser under water any closer than 20 meters. Swell causes boat to emerge to periscope depth.

June 2: 7.50 a. m., passed steamer going in the opposite direction about 10 nautical miles off. Attack not possible on account of weather and distance. Seaway diminishes slowly.

6.15 p. m., at 59° 47′ N. by 16° 2′ E., therefore outside the blockade zone, halted steamer at a distance of 65 hm. by gunfire. Made the approach under water. Norwegian steamer *Hafursfjiord*, 1,669 tons, cargo piece goods, further information not obtainable as the crew had at once left the vessel in the boats, taking all papers with them and had sailed away, it being impossible to find them again in the darkness. Steamer sunk by explosives.

The commander therefore concluded from the behavior of the crew that the enemy destination of the steamer was admitted and therefore destroyed it. The Norwegian Government has meanwhile presented a claim for damages, as the steamer was laden with salt from Cadiz to Norway and that only continued firing forced the crew into the boats. Investigations have not yet been completed.

June 4: Commander decides to steer to the south at 18° 30′ W., in order, on the one hand to comply with the command: "Leave the blockade zone at the western boundary," and on the other hand to retain the advantages of attacking in the blockade zone.

June 4 to 6: Without events.

June 6: 11.45 a. m., steered, partially submerged, to the attack of a steamer coming into view; for the above reason did not reach steamer. Attack abandoned.

As it was possible to note the rapid progress of the vessel a submerged approach was a totally wrong procedure.

Continued that night's travel submerged.

The reason for this in open sea is not apparent. Loss of time and hardship for personnel.

June 7: 6.30 a. m., on emerging sighted steamer at 97 hm. astern. Attack attempted, abandoned on account low speed in the heavy sea. According to its wireless distress signals the steamer is the English steamer *Boniface*, 3,792 tons.

If the night travel had been made at the surface, the steamer would probably have been sighted in good time and have been shot up.

9.30 a. m., picked up wireless report giving bearings of the transport steamer *Saturnia*, 8,611 tons, at 50° 23′ N., and 21° 55′ W. *Saturnia* appears to be coming to the aid of the *Boniface*. Assuming that the *Saturnia* is steering to point Q, I altered our course correspondingly. Sighted nothing.

June 8: Removed the forward portion of the net cutter in order to improve the firing range. In so doing it was decided to put up with the fact that the wireless reception by means of the net cutter antenna was thereby impaired when the masts are not upright.

June 8 to 9: No events. Damages on deck caused by the sea, the torpedo framework tubes suffer therefrom. Commander states that, according to observations made hitherto, during submerged travel with a heavy sea ahead greater headway is made, with less oil consumption, with one engine, than during surface travel with one Diesel engine.

June 10: 6.30, made ready for the underwater attack on a sighted steamer. Came within 4 hm. Did not fire on account of doubt as to the functioning of the torpedoes, which had been exposed for more than two weeks. As tank steamer has only 1 small stern gun, decided to make surface attack. Opened fire at 80 hm. Steamer returns fire, receives shot in the engine. Crew takes to the boats. As the strike (a time fuse is not recognized as such), firing continued until further strikes were discerned. British steamer *Scottish Hero*, 2,205 tons, with barbed wire and parcels post for Canadian general headquarters in France. After placing charts and gun tubes in safety (7.6 cm. rapid firing L.50) sank vessel by explosives. Logbook did not state the course. The latter was calculated back to Canada from the observations of the second mate.

As such a favorable distance for the torpedo shot had been attained than had at first been intended, it is difficult to understand why the shot was not attempted.

Steered to the last point marked on the chart of the *Scottish Hero*. Course 250°.

8.30 p. m., sighted steamer. Approached under water at first in order to get closer. Emerged at 80 hm. Steamer veers off; returns fire. Distance increased slowly, as the *U–155* could not make more

than 9 knots in the heavy sea. Steamer sent out S. O. S. wireless signals. Steamer is lost sight of in the dark.

Commander decides to hold awhile longer to the west along the route of the *Scottish Hero.*

June 11–12: No events. Continued journey southwards.

June 13: 10.30 to 11.30 a. m., three steamers in sight. Fired at one of them for a short time. This steamer sent out wireless signals of warning. All three steamers escape to the south. In the assumption therefore that the steamers will soon resume their course westwards, pursued them, holding at the same time to a westward course.

4.30 p. m., sighted steamer on a SSW. course, too far away.

6.30 p. m., submerged at sight of steamer on a SE. course; armed yacht. Emerged at 80 hm. Fired at same. Yacht answers fire and escapes at great speed. Continued south along the steamer route: England-Gibraltar (March, 1917).

June 14: Steamer in sight astern running a zigzag course. Submerged, made out steamer to be armed with gun in the stern. Decided to attack with artillery, because, as compared with the period of 12 days guaranteed by the Torpedo Experimental Commission, the torpedo equipment had already been exposed 22 days.

On the other hand attacks in the wake or quarter line astern for the purpose of using both guns had not resulted in keeping the steamer within an effective firing range because of our inferior speed, therefore the artillery attack was made from the front this time at 30 hm. Two volleys; struck bridge and chart house. Steamer veers off, returns fire, but is shot up in about 10 minutes; last distance 12 hm. Boats are in the water. Some of the crew are swimming.

A dangerous attack, but smartly and successfully executed.

Second steamer comes into view. Refrained from pursuit because of unfavorable bearings and distance.

First steamer ascertained to be British steamer *Aysgarth* from Hornillo Bay (Spain) to Glasgow; 7.6 nautical miles, stern gun. Captured a number valuable secret documents and navigational data. Captain, first mate, and one man fallen. Second mate and one negro wounded. The men received clothes from the vessel and were then dismissed in the boat. Blew up steamer.

Meanwhile traces of oil are discovered; investigation shows strike in the lubricating-oil tank; loss of about 4.5 tons. Leak in the fuel-oil tank; content of about 40 tons is pumped into other tanks. This took 20 hours, loss of oil about 10.5 tons.

12.30 p. m., sighted steamer coming from the east. Halted by signal and gunfire. Norwegian steamer *Benguela* in time charter of the Anglo-American Oil Co., from Avonmouth to Philadelphia, in the service of the English Government.

The commander captured the ship and equipped it as an auxiliary vessel for towing and for passengers; that is, crews of vessels sunk. Traveled westward, towed by the *Benguela*, avoiding steamer route in order to complete the auxiliary equipment. As the *Benguela* has only a small amount of coal (10 days), the intention is to find another ship to take its place as soon as possible.

June 15: Fixed up the *Benguela* during good weather and a smooth sea. Overhauled the installations of the boat at the same time. Artillery in good order, torpedoes can not be used. Sounded oil supply, loss by leakage about 10.5 tons; engine plant in order. Radius of action calculations show that according to the oil consumption instead of 23,000 nautical miles, 12,000 nautical miles in consequence of the great losses in speed.

This fact, which is extremely deplorable with reference to the strategic exploitation of the U-cruisers, has meanwhile been confirmed by the "U–157."

In view of the *Benguela's* charts, decided to cruise north of the Azores along the westward steamer route and to be towed as much as possible by the *Benguela*.

This is a questionable decision in so far as north of the Azores no course was obligatory even in the widest sense, as was the case south of the same. After the presence of "U–155" had been reported the Atlantic routes to the north could be easily transferred. Thus the decision, in consequence of the above, led to a loss of two weeks which were entirely without result other than that of gathering experience with regard to the use of an accompanying vessel—in spite of the fact that the "U–155" was still sometimes well in the track of the steamers.

June 16–24: Drifting westward with the *Benguela*, sometimes traveling in tow and sometimes under own power. Towline breaks often. Steamers, when coming in sight dodge the *Benguela* so that the commander decides to separate from her as the steamers are evidently warned. With a prize crew on board, the *Benguela* is dismissed to a point further south where she is to be met.

June 25: Made for the steamer route. 2 p. m., steamer sighted over 170 hm. off. Hazy weather permitted approach to within 80 hm. for the artillery attack. Steamer is an oil steamer of the latest construction of about 8,000 tons in ballast. After opening fire the steamer turns toward "*U–155*," fires from the 3.7-cm. gun, distance decreases to 55 hm. Effective fire, 2 strikes observed. Steamer turns away and fires with a gun of about 12-cm. caliber. Distance increases to 80 hm., 3 hits. Steamer sends out wireless distress signals while running 11 knots to the 9 knots of the U-cruiser. At 100 hm. the steamer has got the range. The shots fall close in front and behind the U-cruiser. No. 1 of the 15-cm. stern gun is wounded by

a shell splinter. Continued pursuit with the bow gun in spite of increasing distance. Steamer throws out vapor, smoke, fire. Finally, after a three-hour battle, shooting had to be discontinued at 140 hm. Pursuit is kept up until dark.

The commander adds some general observations to his report about the battle regarding the most expedient manner of attacking armed steamers in view of the low speed of the U-cruiser. Summing up he says: "It would be better to destroy an enemy with guns of equal power by a torpedo shot," just after explaining that it is necessary to approach under water in order to ascertain the armament. In this connection it may be said that such an approach under water can only be successfully executed from a position quite or almost in the line ahead. This position is, however, tactically so favorable for the torpedo that it should be taken advantage of. In all other cases, however, the U-cruiser must, by day, positively put up with the risk of an immediate artillery attack by the merchant vessel, and this at a good firing range (therefore not over 80 hm.) if the adversary is to be held at all, in view of the low surface speed of the U-cruiser.

June 26: In view of the wireless alarm signals about the location of the U-cruiser and on account of the bad weather the commander decides to go south again.

June 28: Met the *Benguela*. As the latter has no more coal or provisions, the commander has his boat towed to within 100 nautical miles north of the Azores in order to send the crews to land in the boats and to sink the steamer.

Tank leakages at several places are ascertained as a result of the pressure occasioned when firing. Also the breaking off of the protecting caps from the torpedo tubes and other slight damage. The periscope motor and the order-transmission system begin to break down rather frequently.

June 29: Towed by the *Benguela*.

5 p. m., Spanish steamer *Joaquim Mumbru*, 2,793 tons, halted. Piece goods, from New York to Barcelona. No contraband.

6.30, during the investigation halted a sailing vessel which came into view. Norwegian sailing vessel *Sirra*, 1,938 tons, cargo 27,135 tons of quebracho wood, 208 liters quebracho extract from Buenos Aires, from the Azores to Le Havre. In addition the vessel has exchanged the English flag for the Norwegian flag since the outbreak of the war. After putting the crew on the Spanish steamer sank the vessel. Released the *Joaquim Mumbru* after destroying the wireless transmitter.

During the night salvaged everything useful from the *Benguela*.

June 30: Blew up the *Benguela*.

Started for Punta Delgada. The commander intends to attack shipping traffic and also to bombard the coast fortifications.

July 1: During the day the boat was heeled over and the torpedoes overhauled. By evening 4 torpedoes were again in good order. The crew is working in a most praiseworthy manner, standing up to the armpits in water. In consequence the men subsequently from "red dog" (headache).

The commander appends to the captured chart material detailed comments regarding his plans for proceeding against the Azores.

July 2: Approached Punta Delgada at night; town has lights screened. Lights of Volle Franke are burning.

9 a. m., approached the harbor underwater, no traffic, two steamers behind the Mole, impossible to fire torpedo. Ran out, emerged when out of sight of land and charged battery. Traveled 10 hours submerged. During this time the motor for the stern depth rudder broke down. As reliable depth steering is more necessary than surface maneuverability, the commander has the vertical rudder motor out and joined to the stern depth rudder. At the surface it is now only possible to steer by hand, greatest angle for the rudder 10°. Circle described by the boat in turning 800–1,000 meters.

For the above reasons the commander criticizes sharply the depth-steering properties of the cruiser. The periscope depth, in view of the short periscope, is only 13.5 meters, whereas in the ocean swell the U-boat does not navigate steadily until at a depth of 20 meters. Commander asks, above all, for a longer periscope.

Commander decides on bombarding Punta Delgada, as the lack of patrol vessels points to lack of traffic, therefore waiting here for vessels appears to promise little result and the steamer *Joaquim Mumbru* must arrive in Spain about this time and will therefore report the presence of the U-cruiser anyway. The steamers lying at the Mole are to be damaged.

From 4.45 a. m. bombardment. When the harbor batteries returned fire and began to get the range, bombardment was discontinued and we withdrew, having fired 53 volleys.

The diary does not state whether the object of the bombardment, the damaging of the steamers, was accomplished or not. If not, then the bombardment was of little use. U-cruisers have now received orders to refrain from useless bombardment of the coastal places.

July 5: Still cruising in the vicinity of the islands in the expectation that in spite of the wireless warnings sent out that there would still be some vessels passing which had no wireless.

Steered to a point 35° 5′ N., by 18° W., where steamer routes between England and Gibraltar (that had been discovered) converge, continuing east or north as the case may be.

July 6: 10.45 a. m., steamer sighted. According to the flag carried it is a neutral or an auxiliary cruiser. Submerged attack is unsuccessful, as speed too low. Attempted, after emerging, to halt

steamer by wireless expecting that a neutral vessel would really stop, whereas if it veered off it can be regarded as an enemy steamer and can at once be fired upon.

At the wireless the steamer turned away at once at full speed, threw out smoke screen while firing well-placed shots from 7.6 and 10.5 guns. As the "U-155" can only keep up with the steamer for a short time and besides can only fire with one gun, the steamer escapes and gets in wireless communication with auxiliary cruiser *Burmia*. Its own signature is "Glenturret."

The attempt to halt vessels by means of an order by wireless will probably only succeed with those neutral vessels which are already well within firing range and which are very slow. This method is, therefore, not to be recommended.

July 7: 2 p. m., submerged attack on armed steamer. A torpedo miss at 3 hm. on account of torpedo being "blind." No bubble track was observed. Emerged; opened artillery attack at 40 hm. The vessel made for the offing.

July 14: 1.40 p. m., a smoke cloud in sight. Took up pursuit, ran at full speed with course set 90° in order to obtain sight bearings. The tips of the steamer's masts gradually rose above the horizon. According to the bearings and the course as estimated the steamer was only running 7 nautical miles. Therefore, making full use of the additional electric drive, I placed myself out of sight in front of the steamer. As, for three days, the battery has only been used for short stretches submerged and for test diving, the engine will hold out for 3½ hours. I am making 9 nautical miles.

5.05 p. m., submerged, and, approaching the steamer by the shortest route at the highest electrical speed, proceeded to the submerged attack.

6.20 p. m., at firing range the steamer was ascertained to be the Greek steamer *Chalkydon*, with Greek neutrality marks.

6.45 p. m., the steamer had no gun. Emerged at 40 hm. and halted steamer by firing 3 shots. The steamer stopped and put out all the boats; the latter rowed over to us and their occupants came on board.

(1) Name of vessel: *Chalkydon*.

(2) Name of captain: Frangoulis.

(3) Name of the owner: Bank of Athens (J. Arvanitidi fils).

(4) Nationality: Greek.

(5) Home port: Syra.

(6) Flag shown: Greek.

(7) Other distinguishing marks: Greek recognition marks on the sides of the vessel.

(8) Cargo: Provisions and piece goods—contraband proved by lading papers and investigation.

(9) Tonnage: 2,870 tons.

(10) Lloyd's register 16/17 No. "C 669."
(11) Port of departure: New York.
(12) Destination: Marseilles.
(13) Special remarks: Was traveling in accordance with instructions from the English Admiralty and had orders to stop at Gibraltar for further information regarding the journey.

9 p. m., as I wished to examine the steamer more thoroughly I took possession of it as a prize and for the night placed a prize crew on board, with Lieut. Helmholt in command. With course set at 190° and at full speed I withdrew the steamer from the steamer route toward the south for the night.

The boat itself with the battery was completely exhausted and could not be recharged, as the cells were still very hot. My diving capacity was extremely limited and it was therefore necessary for me to leave the frequented route in which I appeared to be located, in order to put the boat once more in thoroughly serviceable shape, and in readiness for diving.

MEUSEL.

Sunday, July 15, 5.30 a. m., stopped at daylight: began carefully to charge the battery. This operation had to be interrupted at times, as the battery was still too warm. The charging of the battery was not completed till Tuesday, July 17, and on that day also the temperature of the cells would only have permitted use of the electric drive for at most one hour: therefore a speed of 9 to 10 nautical miles would have been possible for the boat only for one hour.

Decision regarding the steamer *Chalkydon:* The steamer is a neutral vessel, carrying contraband to the extent of more than half its cargo, according to value, bulk, and weight, to the enemy country, partly on behalf of the enemy Government. The vessel is traveling under the direction of the English Admiralty. The vessel is therefore to be captured according to prize regulation No. 41. It appears to me impossible to take the vessel, which with the cargo is very valuable, to a German port. The speed of the steamer is only 7 nautical miles, and has only 300 tons of coal on board, which is sufficient to reach Marseilles. To coal the vessel at sea by capturing a coal steamer would in itself be possible.

But all my experiences hitherto are against the feasibility of this plan. An English coal steamer is armed and always offers resistance. If I conquer with the guns, then the life of the vessel will only be a matter of a few hours at most. After the battle I can not send the English coal steamer to a meeting point. On the other hand, neither can I bring up the *Chalkydon* quickly enough to the spot, as I must place it far away from me, because the vessels have been ordered to avoid all smoke columns at sea. The *Chalkydon*, therefore, in my vicinity would scare away all the steamers that came into view.

I therefore decided to supplement my provisions by taking a portion of the supplies from the vessel, also to take over as much as possible of the other valuable portions of the cargo, and then to sink the ship on the spot. (See prize report.)

The crew had plenty of time to equip themselves and their boats and then received orders to proceed to Madeira. The distance is 80 nautical miles; the boats leave at 8.30 a. m.

I am conscious of the fact that the arrival of the crew in Madeira on Tuesday or Wednesday, July 17 or 18, is equal to an alarm; but the same thing occurs if I engage a steamer provided with wireless plant, which immediately sends out its "allo" calls as I, with the half antenna (of the net cutter), can not prevent these calls by wireless.

In my opinion the disadvantage is slight as I am going to proceed westwards on the route of the *Chalkydon*. The arrival of the Greeks in Madeira will, I believe, result in a disturbance of the traffic traveling from south to north which is entirely desirable.

From the captain of the *Chalkydon*, I furthermore obtained his last sailing orders for the journey from New York to Marseilles, drawn up on July 2, 1917. In these orders I find confirmed my surmise that the vessels at sea are to avoid each other as much as possible: "Avoid closing other vessels," furthermore the order: "Zigzag at utmost speed continuously day and night east of 20° W. when north of 30° N." According to this the appearance of U-boats farther south or west is not expected. I have therefore decided to proceed westwards along the route traveled by the *Chalkydon* and to allow myself to drift along this route.

By 7 p. m. the battery is almost half charged and the transfer of provisions and other things is discontinued. The steamer was then blown up and sank at the end of 20 minutes.

7.35 p. m., the aft port ammunition locker which had been flooded, as the ammunition had all been used, was now pumped out and made ready for the reception of the new provisions which had been taken over. The forward starboard compensation provision tank was also pumped out. After completing the storing away the boat is trimmed anew for surface and submerged travel.

9.12 p. m., steered along the route of the *Chalkydon* with one motor, nothing sighted during the night.

In consequence of the strenuous use of the electric drive, while pursuing the *Chalkydon* on July 14, and of subsequent recharging of the battery, the cooling engine could be used only for the E-engine room and the battery: the temperature in these rooms did not sink below 45° Celsius. The stale air from the living rooms, etc., could only be removed in the ordinary way by opening the hatches. The

air was not good, and if the boat had been compelled to submerge for a long period it would have necessitated considerable consumption of the very scanty store of potash cartridges.

3.15, smoke cloud in sight, started for the attack. Boat attained forward position.

5.19, submerged and started attack on steamer. Ascertained steamer to be unarmed Norwegian steamer *Ellen* from "Haugesund" with Norwegian marks. Emerged and halted vessel by means of a warning shot.

6.50, steamer stopped and the entire crew came over in the boats. Captured the steamer with the first prize crew, leader, Ensign Hild.

At night lay to and drifted together with the steamer and investigated the same with a view to the possibility of unloading the coal for a prize which I might be able to send home.

The steamer *Ellen* was arranged for locomotive transport only. Locomotives had been already transported by the vessel to France—Marseilles—in May, and according to the statement of the captain was traveling only this route.

Decision regarding the steamer *Ellen:* The vessel is a neutral vessel transporting locomotives and coal—absolute contraband—to Marseilles, an enemy port. It is therefore subject to capture and as, in relation to weight, value, and bulk, over one-half of the cargo consists of contraband, it is also subject to confiscation. The vessel must therefore be sunk.

Thursday, July 19; 5.21 a. m., with daylight a smoke column in sight. Took up the pursuit.

At 6.10 a. m. the pursuit had to be abandoned as the starboard engine got out of order, and with only one engine it is impossible to lessen the distance. Returned to the steamer *Ellen* in order if necessary to be able to hide the boat behind the *Ellen* from view of the other steamers.

Repaired starboard engine. The front bearings of the starboard "E" engine had become overheated during the pursuit in consequence of using the electric power as auxiliary. These bearings have no cooling arrangement. The temperature of the oil uses as high as 65°. The normal limit is 20°–25° C. The oil evaporates regularly in the bearings. By laying cold wet strips of tarpaulin on the bearings and by constantly changing these strips a slight improvement was obtained. The tarpaulin strips are applied to the bearings in the same manner as a compress to the head of a fever patient. A different method of cooling by means of water is however not possible of execution because of the danger of a short circuit.

12 noon, as a result of strenuous ventilation with both fans which generates some additional cool air in the oil-motor room, the starboard engine was once more in running order at 1 p. m.

1.25 p. m., smoke column in sight. Took up pursuit.

At 4.27 p. m. abandoned the pursuit as the prospect of overtaking the vessel was hopeless. Joined the steamer *Ellen*. As the locomotives are placed on top of the cargo of coal and the coal can, most likely, not be unloaded, I have decided to sink the steamer at daylight. In so doing I am influenced by the same considerations as in the case of the *Chalkydon*.

The crew is to land on the island Santa Maria the southermost island of the Azores, the distance is 100 nautical miles. The weather is good and therefore their safe arrival assured. They can reach their destination in from two to three days. To transfer the steamer traffic will be difficult as south of the Azores, from America to Gibraltar, the steamers are, for the most part, slow and have no wireless, and therefore can not pick up the warnings. The fast steamers, with wireless outfit, still remain according to my past experiences, inaccessible to me because I can not maintain the firing range of 80 hm. for lack of speed. If I push farther west along this route I can, during the next 8 or 10 days, lie in wait for the vessels which have already left America and are on their way.

6.40 p. m., smoke column in sight. Took up pursuit, but at 7.45 the smoke column was lost to view in the falling darkness, therefore pursuit abandoned. For the night proceeded with the *Ellen* to the spot where the vessel was to be sunk.

MEUSEL.

Friday, July 20: At 4 a. m. increased the distance from the *Ellen* by 5 to 6 nautical miles, in order to be able to attack any vessels that might chance to come into view at daylight.

1 p. m., steamer in sight ahead.

1.15 p. m., submerged for the attack. The steamer appears to be an enemy auxiliary cruiser of about 4,000–5,000 tons, with a large dark-red spot of red paint aft on the starboard side of the vessel.

2.17, fired torpedo; missed. According to the report of the adjutant who was aiding me in the attack in the conning tower and who observed the track of the torpedo after it was fired, the torpedo ran in a snake line. The distance was, however, over 600 meters as I could not get any closer. As it was not possible to aim another torpedo and the armament of the adversary was superior to mine I decided to remain submerged and not to engage him in a gun duel. The auxiliary cruiser did not see the torpedo track, but went calmly on its way.

3.17 p. m., emerged, auxiliary cruiser out of sight.

5 p. m., smoke cloud in sight. Took up pursuit. Only one engine in running order. Repairs to the bearings are still in progress.

5.57 p. m., submerged; proceeded to the attack. Steamer appears to be unarmed steamer, but has neutrality marks recently painted

over on the sides of the vessel, so that the former presence of the same can only be surmised from the difference in the color on the vessel's sides.

Special remarks: Is traveling under the "Time charter" for the English firm Turness, Withy & Co., Government agent. The Norwegian marks were removed at the advice of the English Admiralty.

Decision regarding the steamer *Hanseat:* The steamer *Hanseat* is a neutral vessel, Norwegian, which, however, has been placed for the duration of the war in the charter of the English firm Furness, Withy & Co., the latter again being known to the German Government as an agent of the British Government. The vessel is therefore subject to capture and confiscation, or, as the case may be, destruction, in accordance with prize regulation No. 56, c, grave instance of rendering assistance in violation of neutrality. The vessel must therefore be sunk.

I therefore decided to sink the steamer at once, then during the night to tow the people in the boats a little closer to land and cast them loose before daylight. They will arrive about the same time as the crew of the *Ellen.* A remarkable statement was made by the captain to the effect that the English Government informed him that it would make no difference whether he had Norwegian marks on the sides of the vessel or not, he would be torpedoed and sunk in mid-ocean by any German U-boat, and the crew shot. This also explains why the entire crew always leave the vessel in the boats and at first always row away.

The log books and the memorandum pads of the *Hanseat* and the *Ellen* contain valuable information for the operation of our boats in the Mediterranean and elsewhere.

9.50 p. m., sank the steamer *Hanseat* by explosive charges. Steered toward Santa Maria, Azores, with 3 boats of the *Hanseat* in tow.

July 26; 6.40 a. m, steamer in sight. Proceeded to the attack. Advance, the engine was operated up to the limit of its endurance in the attempt to advance to within torpedo range. Did not succeed. At a distance of about 1,500 meters the steamer was ascertained to be an armed steamer without distinguishing marks. At 60 hm. emerged for the artillery engagement.

Opened fire with both guns at 65 hm. The steamer returned the fire and quickly got the range of the boat. Shots struck close to the boat. Port diving tank III appeared to be slightly damaged by the explosion of a shell, as it began to leak. At 80 hm. the steamer threw out the customary smoke, and within 15 minutes was enveloped in a thick cloud as large as a house, which covered even the tips of the masts. An attempt to steer to windward in echelon order failed because of very low speed.

When the smoke clouds blew away for the first time, the steamer was seen to have turned off 4 points to leeward and was developing (as shown by the thick smoke issuing from the funnels) its utmost speed.

At 95 hm. opened fire again with both guns, from 110 hm. on pursuing engagement with the forward gun. No strike was made. The steamer escaped at a speed of 10 to 11 nautical miles. The speed of the boat in the best weather with a smooth sea and no swell does not exceed 7.5 nautical miles.

I continued pursuit, keeping the steamer under fire until it was beyond range of the guns. At about 11 o'clock the steamer was lost to view.

An examination of the guns after this battle showed by accurate measurements that there is so much slack in their training and pivoting gear that it is possible for a man to move the end of the tube 21 mm. sideways in either direction by simple pressure with the hand. This explains the poor results of the shooting. The forward gun has fired on board (up to to-day) 453 shots, the aft gun 288. An attempt was made to overcome this fault by tightening the pivot screws and by inserting a piece of sheet iron. It appears to have been successful, although the training gear of the guns works a little more heavily. The guns have, however, ceased to be weapons of precision.

This engagement also demonstrates how necessary a speed of 12–14 nautical miles is for the submarine cruiser. At the end of two hours I had to abandon the chase because the steamer passed out of sight. If, on the other hand, I had been able to maintain the firing range I believe that, with the prevailing beautiful weather, I would have been able to continue pursuit until the vessel's supply of ammunition and vapor bombs was exhausted and eventually to have run it down and fought it to a finish. For the rest of the day drifted with engines shut off. In the afternoon the torpedoes were regulated. One of the torpedoes, the starboard stern torpedo, does not retain the air very well.

I would like to take this opportunity of pointing out the sounding arrangement for the oil tanks. The supply of oil is ascertained by letting down a bottle tied to the end of a string. The bottle is allowed to sink to various depths, and according to whether it is filled with oil or water when drawn up, the oil content of the tank is estimated. An oil gauge should be provided for this purpose which is in accordance with the modern technical achievements, possibly little testing cocks at various heights on the tank so as to enable one to ascertain the radius of action at any time, thus guarding against unpleasant surprises.

Tuesday, July 31: 5.25 a. m., sailing vessel in sight.

7.15 a. m., halted sail vessel by gunfire. Sailing vessel returns fire with two small 9-cm. guns and one gun of about 13 cm.

The enemy vessel maneuvers very cleverly with the three guns, by marking the points of impact of my 15-cm. gun with his 13-cm. gun in order to entice my boat to come closer.

7.45 a m., sailing vessel sends out wireless signal, "S. O. S., 341o 223o, madeleine voiler." The sailing vessel received several strikes, but does not give up the fight, hoists no flag, and does not heave to.

As appears hardly possible for the enemy to fire to the front, I maneuver to a forward position in order the sooner to force him to abandon his resistance. The engagement continued until 9.20 a. m. After the eleventh strike his firing ceases; I therefore discontinued mine also. I submerged and passed around the vessel in order to make a more careful examination, as I believed the vessel to be a U-boat trap on account of the three guns (amongst them a 13-cm. gun) and the wireless outfit. While I was still at a distance of 2,000 meters the vessel sank.

Emerged and searched the field of wreckage; on one boat and on the life buoys was the inscription *Madeleine*, Bordeaux.

10.15 a. m., at the moment, when at 10.05 a. m. I was intending to approach the four boats (which were closely packed with people who had evidently taken to the boats while I was emerged), in order to get the papers, etc., from the captain, a smoke cloud came into view and I made for that first. 1.02 a. m., submerged for the attack. Steamer is ascertained to be an armed steamer without distinguishing marks. Emerged at 70 hm. and halted steamer by gunfire. The steamer returns and throws out the customary smoke and vapor in order to escape from the gunfire. Steamer sends out wireless signals "S. O. S. 33 N 22 28 W shelled, shelled."

After an hour's engagement the steamer lets off steam and puts out the boats. I thereupon ceased firing.

After two boats had been put out another wireless message was picked up, "Leave your ship at once" and at the end of two minutes fired a volley.

Another wireless message was picked up, "Ship sunk by submarine at nine a. m. to-day lat. 33° 51′ N., 22° 35′ W." According to this the above wireless communication was sent out by another steamer which is in the vicinity but not within sight and which appears to have picked up the destroyed vessel *Madeleine*.

The boats of the steamer came alongside. We then went back to the steamer with the boats, gave them time to equip them and provision them and instructed them to sail to Madeira.

The vessel was searched for secret documents, but nothing of especial importance was found nor did a visit in person by captain,

officers, and wireless personnel reveal anything more. Everything had evidently been destroyed beforehand.

The log book was found (which, however, contained no routes) and the notebook of the captain belonging to it. From his notes I shall be able to trace his route backward. Furthermore it will be possible, by a close study of the notebook in conjunction with the log book, to find valuable information regarding the steamer routes of the English Admiralty for their collier transports. I have furthermore taken charge of two cases, one containing a set of charts for an auxiliary vessel of the British Navy, the other one the corresponding nautical books. I dismounted the 7.6-cm. gun and took it on board. As, however, this necessitated a refilling of the loading chamber with ammunition and therefore a partial unloading of an ammunition chamber the trim conditions of the boat are not favorable. I am, therefore, obliged to throw the second of the captured cannon overboard again in order not to endanger the diving capacity of the boat.

Sank steamer *Snowdonian* by explosive charge. Drifted throughout the night with engines shut off.

Aug. 2, 2.05 p. m., smoke cloud in sight. Attempted surface approach. I am in the sun and am hoping to escape discovery. It would have been impossible to make approach submerged because the bearings changed too rapidly forward. In spite of my favorable position right in the center a strip of sunshine the boat is spied at a distance of about 8 nautical miles. The steamer turns away and I try to follow. I had not yet come within gun range. When the boat is remodeled the high upper deck must be made as low as possible, so that the boat will not project so far out of the water but will be lower and less conspicuous. The upper deck was originally built high above the pressure hull for the sole purpose of storing the cargo of rubber underneath it.

5.50 p. m., while pursuing the steamer a sailing vessel comes into view. The hopeless pursuit of the steamer was therefore abandoned and I proceeded toward the sailing vessel.

8 p. m., halted sailing vessel at 110 hm. by gunfire. Hoisted the signal "Stop." The sailing vessel, a four-masted barque, returned fire, and, sailing hard by the wind, hoisted the French flag and attempted to escape. Therefore continued to give battle. Sailing vessel received on the port side amidships. In spite of this hit the sailing vessel did not turn about: hauled the flag at half-mast. Thereupon when I again approached to within 85–90 hm. the vessel again opened fire. I again opened fire on the adversary. Several hits were observed. I maneuvered to a position in front of the sailing vessel, encircling the same at a distance of 85-90 hm. In the lull of the evening the vessel was making hardly any headway.

9 p. m., engagement ended. I observed the putting out of two boats which, however, did not seem to me to be enough for the crew. The vessel gave no sign of stopping such as lowering the sails or back bracing. I lay to ahead in front of the sailing vessel awaiting the arrival of the boats.

10 p. m., as nothing is to be seen of the boats, submerged and approached the sailing vessel. The vessel is drifting to windward and seems to be abandoned. Emerged, sent a shot through the rigging; as nothing happened in response to this shot, sent Ensign v. Helmholt in the dinghy with four men and the necessary equipment of hand grenades on board the vessel in order to examine same. The ship was abandoned. One dead was found on board, and traces of blood on deck and below deck gave evidence that others of the crew had been injured also.

12 midnight, searched for the boats but were unable to find them in the night. Sent off I and II prize crew.

Made guns ready for transfer, prepared vessel for blowing up by means of explosive charges.

Friday, Aug. 3: The vessel was the French four-masted barque *Martha* and belonged to the same company as the *Madeleine* and *Alexandre*, and left the mouth of the Gironde at the same time as these vessels.

Some interesting disclosures were made in the diary of a cabin boy. According to the latter, 10 sailing vessels gathered at the mouth of the Gironde and started on their journey together. On July 9 nine of the sailing vessels were mutually sighted. One of the vessels, the *Versailles*, sighted a U-boat and fired. The *Marthe* likewise fired 10 rounds. On July 11 ten vessels were again sighted. At 10.30 a. m. the *Versailles* again fired several rounds at a U-boat and exchanged signals with *Reine Blanche*. On July 12 more firing at U-boats. The locations of the vessels are shown in the chart. Of the sailing vessels which left the Gironde on July 5–6 the following ran into my net: The *Madeleine*, which with wireless outfit and good-sized gun was evidently a sort of flagship of this informal unit, the *Marthe* which had two more guns in the cargo place. From the diary it was gathered that these were intended for a vessel located in Chile, and probably the gun crew belonging to them were there also, judging by the number of uniforms found. I would draw attention in a general way to some points of military importance.

(1) By chance the boat had a spare thrust bearing on board which has been inserted in place of the old one as the balls in the thrust bearing of the port engine had become angular steel blocks. It is to be deemed as especially fortunate that this spare piece, which had been requisitioned by the captain, but which had nevertheless been scratched from the list, so that the "Kaiserliche Werft" demanded

the return of the same shortly before the departure, was nevertheless retained on board, as otherwise the return of the boat would have been more than doubtful owing to the poor facilities for charging the battery, the clumsy depth control thus still further decreasing the maneuverability of the boat.

(2) The matter of modernizing of the sounding device for the oil tanks must certainly be taken up. On August 16 it was noticed that the starboard auxiliary diving tank IV had lost about 11 tons of oil; that is, the boat had lost about 500 nautical miles of the radius of action. Within two weeks the same thing had occurred twice. The first time was on July 30. For the return journey there is therefore a lack of 11 tons of oil, or a decrease in the radius of action of 1,000 nautical miles. Whether the boat actually has enough oil for the journey home can not be stated with certainty, according to experience hitherto, it is doubtful. The oil sounding device does not give the captain any certainty which he can rely on in making his decisions. The only thing of which I have certainty with regard to the oil tanks is that at the time of our departure they were all full. I can only hope that they are still in the same condition.

(3) The evaporator plant has given great satisfaction. At first it had to undergo a number of little breakdowns, later, however, it worked perfectly. There was never any lack of drinking water or wash water, so that the good health of the crew may, in port, be attributed thereto. It would, however, be a good thing to attach an evaporator to each Diesel engine so that the water would be generated continuously. In *U–155* water was only generated when the port Diesel engine was running. This does not detract from the radius of action and the extra weight of the installation is insignificant.

Without the evaporator the extended period of the undertaking would have been impossible for lack of water.

(4) Equally excellent service was obtained from the turning lathe which had been installed for the first time on a boat. This turning lathe made many a repair possible which if it had not been possible of accomplishment might have been very bad for the boat. For instance many of the repairs on the exhaust valves were only possible by means of the turning lathe.

On August 15, 1917, Wednesday evening at 7 o'clock the work of overhauling was completed and the return journey was begun. On the return journey I have planned to cross point "B," which is marked in the sailing chart of the French vessel *Marthe*, and then to continue through the blockade zone round the Faroe Islands. I have one more torpedo of which the air flash is very leaky, and which must be fired during the next week or two if it is to be depended on with regard to functioning. With great difficulty the torpedo was reloaded from a stern tube to a bow tube.

Aug. 16: 2.25 p. m., steamer masts in sight to the right ahead, steering a course 270°. No prospect of success for torpedo attack. I attempted submerged to get within gun range. The boat could not get closer than 120 hm. As I take the steamer on this route to be a neutral steamer in the British service I fired some warning shots to halt same. The steamer thereupon turns away to starboard and lets off some steam. But as the vessel neither stopped nor made ready to put out the boats and as besides the distance was increasing—valuable services of the B. G.—I opened fire. It is, however, impossible to make a strike at this distance with the old 15-cm. quick-firing L. 140. The steamer escapes at a speed of 13 knots as may be gathered from the wireless message which was picked up: "*S. O. S.* N. 10° W., 13 knots—*Toba Maru*—double the speed of the *U–155*."

It must, therefore, be the Japanese steamer *Toba Maru*, 7,300 tons, built in 1916, of the Nippon Yusen Kabushiki Kaisha, in Osaka. These few shots were sufficient again to cause enormous leaks in the oil tanks. A gigantic spot of oil formed around the boat. In the evening the leading enquirer brought the report that the starboard auxiliary tank No. V had run dry. About 1,200 shots have, up to the present, been fired from the boat. This appears to be the utmost limit for the oil tanks, for this springing of leaks is a serious matter and might eventually cause the boat, while still intact, to drift helplessly for lack of oil.

The kicking of the guns has again become noticeable. The motive mechanism of the guns has acquired more slack, and the guns roll independently back and forth with the motion of the boat. It is no longer possible to point steadily on the target with the training devices. Successful shooting is no longer feasible under the circumstances, as it is no longer possible either to elevate or train the guns correctly.

I am obliged to-day to end my activities with regard to the artillery. The artillery was in charge of Lieut. Krapohl, who directed it with calmness and discretion in the 15 stubborn artillery engagements. He was assisted herein by the assistant surgeon. Therefore, with a heavy heart, I am most reluctantly obliged to come to the decision to give up all shooting from to-day on, as the condition of the guns guarantees no results and because, furthermore, even warning shots for the purpose of halting vessels suffice to burst the tanks.

Aug. 28: 12 noon, I am obliged to-day to end my activities with regard to the artillery. As by to-morrow I shall be on the east side of England, where I may have to be ready for counteractivities on the part of enemy U-boats and, on the other hand, because, on account of the bad weather since August 15, the last torpedo has neither

been regulated nor refitted with air for 13 days—rusted chamber bottom? The surface maneuverability of the boat is now of most importance in order to be able to dodge torpedoes if necessary. Therefore the motor of the stern depth rudder has been taken out and connected up with the vertical rudder. Period for the work, 6 hours. For submerging to depth and for steering at 30 m. the hand drive will suffice, but not for navigating a torpedo attack.

MEUSEL.

ENTRANCE TO THE BLOCKADE ZONE.

Monday, Sept. 3: 2 a. m., passed Helsingborg. Exchanged E. S. (Electric signals?) with *U B 58*, which was outward bound. *U–155* was uninformed of the boat. At Lappe-Grund a Danish torpedo boat threw a searchlight on the boat for a moment.

8.08 a. m., gave out wireless message to Lothringen: "Am at Malmo, kindly provide for reception and pilot."

U–155 has succeeded in getting as far as "Malmo" unnoticed. In response to the wireless *U–158* came up. *U–155* followed in the wake and in the vicinity of Brogden lightship, *U–158* screened *U–155* from a Danish torpedo boat. After the *U–155* had passed, the Danish guard boat weighed anchor and steamed to Copenhagen. Made fast alongside the ground patrol vessel *Lothringen*. Waited there for the *U–151* according to an order from the U-cruiser flotilla. After interchange of experiences with *U–151* did not continue journey that night, but allowed the entire crew to rest.

MEUSEL.

Sept. 5: 7.30 a. m., weighed anchor. Set course in direction of Bulk lightship. Commander v. Koch, chief of the flotilla, came alongside in the *D–5*. The chief of the flotilla came on board and greeted the crew in an address.

10.50 a. m., passed the boundary of the Imperial war harbor inward bound.

11.40 a. m., Her Royal Highness Princess Henry of Prussia comes in a boat as far as the obstruction to meet the *U–155*.

12 noon, moored at the trial trip quay of the Imperial wharf, Kiel.

12 to 2 p. m., Her Royal Highness Princess Henry of Prussia on board for the purpose of greeting the crew.

2.10, his excellency, Admiral Bachmann, station chief, on board for the purpose of greeting the crew.

Completed Kiel, September 5, 1917.

MEUSEL,

Lieutenant, Commander of the U cruiser "155."

EXPERIENCE.

Military.

(1) *General.*—Owing to our auxiliary cruisers all enemy steamers of the trans-Atlantic lines are heavily armed. English steamers up to 2,500 tons as a rule carry a 7.6-cm. gun, larger steamers a 10.2-cm. to 15.2-cm. gun. The torpedoed English steamer *Iran*, of 6,250 tons, had been equipped with a 15.2-cm. gun at Kapstadt. American ships appear to be extremely heavily armed; for example, the tank steamer *Sun*, 4,800 tons, carried two guns in both bow and stern of at least 10.2-cm., and machine guns were installed in the yardarms of the bridge. French steamers as a rule carry a bow and stern gun. The *Ruelle* had a 7.6-cm. gun in both bow and stern. An oil steamer, with which our boat had an engagement, had a 7.6-cm. gun in the bow and a 7.6 and 13 cm. gun in the stern. The large French sailing vessels carry two guns aft, usually old 9-cms. The *Madeleine* also carried a 13-cm. and was fitted with wireless.

As defense against submarine attacks, steamers proceed according to the instructions which they have received from the British Admiralty, some of which were found among the papers of the *Aysgarth* (see Appendix *Aysgarth*). Steamers with light guns work with "fog boxes" or some other effective smoke-producing device. The steamers envelop themselves so completely for from half an hour to an hour that the tips of their masts can scarcely be discerned. The slow speed of the *U–155* made is impossible for her even to bring the vessels under fire while free of smoke. For the same reason it was seldom possible to obtain a position at the start on the weather side of the smoke. Enveloped in smoke the vessels steer a zigzag course, and if the smoke clears away for a moment they fire rapid salvos from their guns. Large and fast steamers of 11 knots and upwards usually dispense with smoke screens, but answer our fire with their heavy gun and make off at top speed. At 100 and 120 hm. *U–155* was still covered, and even at 100 hm. received a slightly damaging hit.

The poor speed of the boat caused many failures, as the *U–155* could not maintain the most favorable range with the fast steamers. The general rule for gunboats (artillerieboots), which are so much higher and therefore visible at so much greater distances and present a so much better target than our low front-line boats, is for the boat to keep herself at the limit of range of the enemy guns. *U–155*, when she did not approach to launch a torpedo, emerged at from 60 to 70 hm. and opened fire on the enemy, but in spite of the best efforts of the boat, in only 4 out of 15 engagements was the enemy worsted, escaping on the other occasions by reason of his superior speed. A surprise attack by gunfire across the bows at 30 hm. at the surface

was, of course, successful, and the steamer was sunk in 10 minutes at 20 hm. Before sinking, however, and in spite of the fact that our second salvo was on the target, the steamer succeeded in firing 8 shots, during which our boat received a direct hit, which might easily have inflicted serious damage.

Engagements are usually pursuit flights. Since under these conditions only one gun can fire, the 15-cm. R. F., L/40, had very small chances of getting in a hit above 95 hm. The new L/45 guns brought better results. Another difficulty is the working of the boat in the swell of the Atlantic. The crews of steamers do not take to the sea in a U-boat attack, contrary to what takes place in an auxiliary cruiser attack, until their ships are seriously damaged, that is to say, with hits in the engine room or at the water line. Two or three hits in other parts of the ship have never caused them to abandon their vessel. They know that the submarine can not accommodate them, and that their only alternatives are to take to the sea in the open boats or go down with their ship. They usually choose the latter, and defend themselves as long as possible with their gun. In addition to this the British Admiralty has spread the report, even among neutrals, that the German U-boat crews shoot down every man that falls into their hands.

Working in conjunction with an auxiliary vessel is not always an advantage to a submarine, but, on the contrary, is usually quite an obstacle to her freedom of movement. *U–155* therefore based her operations on the islands of the Azores or Madeira, and whenever possible allowed the crews from the steamers to land there also. *U–155* did not suffer any special disadvantage from this. The danger did exist, however, that subsequently the steamer traffic might be directed from these islands. If one is forced to dispense with island bases and work by the aid of an auxiliary vessel the latter must hold herself at a distance from the operating submarine, as all the steamers plying in the English service have orders to steer clear of smoke clouds and therefore avoid the submarine auxiliary.

It will scarcely be possible to fit out an auxiliary cruiser at sea. With two 8.8-cm. guns she will be able to attack only neutral contraband traffic. All other steamers will carry at least as strong an armament as her own, if not one that is superior to it, and will furthermore avoid her so that she will be able to capture them only through superior speed. Added to this is the question of coal and supplies.

The prize *Benguela* could keep the sea only 14 days even with the most frugal consumption of coal and provisions.

APPENDIX TO WAR DIARY OF SUBMARINE CRUISER "U–155."

Report concerning the two prize crews carried on board the "U–155."

I. *U–155* had on board two prize crews, each consisting of 1 officer, 2 naval petty officers, 2 technical petty officers, 1 radio operator, and 5 seamen.

II. *U–155* only once attempted to work with a prize ship used as an auxiliary, on which occasion one prize crew was sufficient. The disadvantages obviated by working in conjunction with an auxiliary vessel did not outweigh the advantage of keeping the operations of the submarine secret for as long a time as possible. In a gun attack on steamers fitted with radio, which escaped in most cases, the position of the submarine was disclosed, and the danger arose that the prize would fall into the hands of an enemy cruiser hastening toward the place where the U-boat was.

III. It was the intention of the *U–155* to use her two prize crews by having the first take charge of a captured steamer and station herself at about 30 to 50 nautical miles from the boat. The next captured steamer was to be taken charge of by the second prize crew, and of the two prizes the least useful one was to be sunk. Both the prize crews were then to be placed on one prize ship. The third prize would have to be taken to this prize by the submarine herself, which would thus be compelled to leave her field of operations, the steamer lanes, for several days. Further decision would have to be taken in accordance with the circumstances, depending upon coal supply, provisions, etc. The only alternative to the above would be for the submarine to summon her previous prize by radio, which was not a success in the case of the *Benguela*.

IV. *U–155* therefore preferred to base her operations on the Azore Islands or Madeira, sink all ships as quickly as possible, and permit their crews to take to the sea in the open boats. I always adhered to it as a principle in the case of neutrals that the life of the crews was sufficiently safeguarded if they were not more than 200 nautical miles from land.

This does not mean, however, that one may not in the case of greater distances proceed as in Case III above.

V. But little will be attained by fitting out a steamer as an auxiliary cruiser and manning her with the two prize crews. For one thing, a suitable fast steamer must first be found. Only a fast cruiser will be successful, as all vessels operating for England avoid smoke columns at sea. There is also a question of coal supply. The armed collier *Snowdonian* did not surrender until she was rendered unseaworthy by gunfire. She had sustained several water-line hits, and it was therefore impossible to take off her coal. The third point against fitting out an auxiliary cruiser is the feeble armament that

can be given her. No ship is any longer armed with anything below a 7.6-cm. gun. Ships of 5,000 tons upward, as a rule, carry a 10.5-cm. gun. The auxiliary cruiser will therefore be inferior as a rule to the armed steamers and she can be used only against neutrals carrying contraband. If the idea of fitting out a captured ship as an auxiliary cruiser be abandoned, the need for the two prize crews also ceases to exist.

VI. The assignment of two prize crews to the submarine cruiser means a burden to the boat and an unnecessary consumption of air, potassium, and provisions, even if the extra crews are continuously employed as fatigue parties for the upkeep of the boat.

U–155 transferred both her prize crews to the *Benguela* for 8 days, so as to have more air and room and a greater opportunity for resting.

MEUSEL,
Lieutenant and Commanding Officer.

Stand Taken by the Flotilla Headquarters on the Prize Report of the "U–155."

Even if the prize crews were found to be too large by the *U–155*, and could not be utilized at their full number, it is not considered necessary to change the regulation strength of these crews until additional experience is available.

Flotilla headquarters will assign a prize crew of different strength to the next submarine cruisers according to their duties and the intentions of their commanders in order to gain as varied experience as possible.

v. KOCH,
Commander and Flotilla Chief.

COMMENT ON SITUATION IN THE ARGENTINE NAVY.

Source: "La Nacion," Buenos Aires, Argentina.

(14727.)

14 June, 1921.

It has been evident for some months that the morale of the Navy is being lowered. The last people in the world to acknowledge this would be the proud and intensely patriotic and loyal officers of the Argentine Navy. Much was expected of Admiral Zurueta, minister of marine, when he took the portfolio vacated by the civilian Dr. Moreno, and the Navy was greatly pleased when he succeeded almost at once in having filled the vacant posts ashore belonging to flag officers—for the President had allowed these posts to fall vacant without assigning reliefs. Apparently, Admiral Zurueta could not

induce the President to assign a flag officer as commandant of the Puerto Militar Navy Yard, and this post remains in command of a commander.

The assignment of flag officers for command afloat very plainly took the heart out of the Navy; for every one of the commands went to officers who had assisted President Irigoyen in the revolution of 1890—a revolution whose recollection is so obnoxious to the Argentine people that no mention whatever is made of it in Argentine school histories, and about which it is impossible to get any Argentine naval officer to talk.

Recently the commander in chief of the fleet, Rear Admiral Montes, has been nominated as vice admiral, thereby jumping over Rear Admiral Juan A. Martin, the head of the list and an officer of large ability who is idolized by the service. This is most offensive to the Navy.

The editorial in the Nacion reads as follows:

Observation of what has been done lately in the navy makes it evident that the assignment of a naval officer as minister has in no respects solved existing difficulties. The approbation given by naval circles to the assignment has added another delusion to the many experienced with the public powers.

It can not be said that the conditions in the navy are very different from those pertaining before, but it is undoubted that what was experienced then, even with the inertia of the last four years, was insufficient to break down enthusiasm, and that the energies of the first days of the new ministry appear to have disappeared, leaving nothing but attention to routine matters.

Never has the part taken by naval conscripts in labor troubles received adequate praise. They have preserved order and executed technical missions in strikes in power houses and public service works. This year their activities have been so prolonged that their course of instruction will be much abridged. This on one side and an incomprehensible vagueness on the other in the handling of the men in charge who are charged with the preservation of costly material and with the duty of fulfilling the high traditions of the service by the development of the force to the best advantage possible with the sums it costs the country.

The first of any importance of the new ministry was the filling of many posts left vacant or administered by acting heads. This was hailed as an accomplishment. Here, however, is an exception: Puerto Militar Navy Yard, commanded by a commander, remained as before, as did the intendencia of the navy. It was said that the President of the Republic ordered this.

A little later everything accomplished for the Naval Aviation School was held up, and all the former work on what would have been advance for the navy thrown away. No adequate reason has been given. The same minister had been a member of the council that had approved this excellent proposition; now as minister he undoes it.

Recently the first announcement of promotions were made, and the storm which always accompanies like occasions became extraordinarily violent. Marred by tardiness as usual, but very tardy this time, the promotions embraced only a group of favorites, those whose political sympathies were open, such as in the case of the commandant of Puerto Militar: that is to say, many of these promotions were bad ones. In the line and in some staff corps vacancies were

filled; but the electrical engineers, the surgeons, the pharmacists, and paymasters remained as they were.

Lately the payments of salaries have been lamentably delayed. A few days ago the personnel received their April pay.

The results of all this show up at once, and demand attention. What is necessary is a chief who can solve them.

SPEECH OF REAR ADMIRAL MANUEL J. LAGOS (RETIRED) REGARDING NAVAL POLICY OF ARGENTINA.

Source: Reliable.

(14031.)

13 June, 1921.

On June 10, 1921, Admiral Lagos lectured before the "Instituto Popilar de Conferencias" (whose president is Dr. Estanislao S. Zeballos) on "Naval Power as the Guaranty of a Nation's Sovereignty and Power."

He made the definite recommendation that the naval power of Argentina between 1922 and 1932 should be increased by the following:

8	battleships armed with 14 or 15 inch guns.
4	battle cruisers armed with 14 or 15 inch guns.
8	modern scout cruisers.
25	flotilla leaders.
40	destroyers.
40	submarines.
1	modern school ship (8,000 tons).
100	airplanes.
3	dirigibles.
6	captive balloons.
2	destroyer repair ships.
3	submarine repair ships, with salvage gear.
1	airplane repair ship.
1,000	mines of the best type.
6	transports (5,000 to 15,000 tons).
5	oil tankers (5,000 to 10,000 tons).
4	oil barges (1,000 to 5,000 tons).
8	tugs (500 to 2,000 horsepower).
7	sloops (200 to 600 tons).
1	floating dock (2,000 tons).
1	floating dock (35,000 to 40,000 tons).
500	torpedoes, 45, 53, and 60 centimeters.

Attached hereto is a clipping from the Buenos Aires "Standard" (British) criticising Admiral Lagos's recommendations. The statement that electric fittings and gun parts have disappeared from the *Moreno* and the *Rivadavia* are untrue and ridiculous. There are few navies that devote so much attention to the care and security of property as does the Argentine Navy.

CONDITIONS IN MUKDEN, MANCHURIA.

Source: Reliable.

(12680.)

14 June, 1921.

Semenoff's Agents Seeking Aid of Americans.

From Semenoff's agents here I find that Semenoff left Port Arthur by boat on May 29 for Vladivostok where he intends to take a more active part in opposing the Bolsheviks.

It is apparent that Semenoff's position is much weaker than he expected it to be at this time. The Japanese do not seem to be giving him the support which he formerly had, and he seems anxious to cooperate with Americans, and his agents have been very active in trying to make some arrangement of this sort.

A reliable American at Yokohama came to Mukden about a week ago and was approached by two of Semenoff's agents who tried to enlist his support. One of these agents, Gen. Tolmachoff, was most persistent and was very anxious to have Capt. Harloe meet Semenoff, but Capt. Harloe refused to become identified in any way with the Semenoff crowd. When he went to Dairen, however, Gen. Tolmachoff took the same train and went to Port Arthur and reported to Semenoff the results of his interview. Semenoff gave Capt. Tolmachoff a memorandum in Russian which the latter handed to the American at Dairen. It was apparently an appeal for American assistance and a statement of Semenoff's position.

Gen. Tolmachoff admitted that Semenoff was supported by the Japanese and that the Japanese evidently expected some quid pro quo, but Gen. Tolmachoff does not favor the Japanese and wants to use Americans to offset their influence. He also admitted that Semenoff was something of a monarchist and that he wishes to assist the monarchist movement in China.

Gen. Tolmachoff said that Semenoff had valuable concessions in Mongolia and Siberia which he wished to turn over to Americans. In one interview he said that Semenoff wanted to bring about better relations between Mongolia and China, but I told him that I did not see how he could do so while his subordinate, Ungern, was massacring Chinese and supporting the Mongolian independence movement. I also told him that it would be hard for Americans to support a party which was assisting Mongolians against the Chinese and was working for the restoration of a monarchy in China and which had promised the Japanese monopolistic rights in Siberia. I also told him that since the Japanese had used money and men to support Semenoff they would be very bitter if the good things in Mongolia and Siberia were turned over to Americans. Gen. Tolmachoff, however, remained unconvinced and still seems to think that Americans should actively support Semenoff.

Baron Girard de Soucanton, Semenoff's Mukden agent, is, I believe, very pro-American, and while he works for Semenoff he is not, I believe, at all favorable to Japanese expansion. He feels that the Japanese are a serious menace to both Russia and America, and that if they are allowed to retain their hold in Vladivostok and the Priamur district the situation will become very serious from a political, military, and commercial standpoint. He says that reports from Japan indicate that the people of Japan are being taught to believe that a Japanese victory would be absolutely certain. He firmly believes that the Japanese military party, if pressed too hard by the laboring and mercantile classes, will arrange for a war against America so as to keep themselves from being downed by the Japanese people. While this idea, of course, is not new it is mentioned as a matter of interest.

British Start Investigation in Chientao District (Northeast Manchuria).

The representation of British merchants in China to their Government at home is evidently having some effect. The British Government seems to be more interested than ever before in having a really "open door" in Manchuria, and it is apparently determined to ascertain the extent to which the Japanese have used undue influence in extending their control over this region. The British Government instructed Mr. Cunningham, who was British consul at Dairen, to make a thorough study of the Chientao district and to see just what the Japanese have done and are doing at the present time. He is there at the present time, and I am told that the Japanese feel very resentful about his presence and say that it implies British lack of confidence in the Japanese. His report will doubtless carry considerable weight with the British Foreign Office, as he belongs to the Japanese service and is reputed to be very well informed on general conditions in China and Japan. The Japanese seem to be following a somewhat moderate policy at the present moment, for they do not want to go too far in their predatory policy until the Anglo-Japanese alliance is renewed. They feel that there is a strong feeling among British, Chinese, and Americans against the renewal, and they do not want to furnish the opposing camp with any more ammunition to be used against them. From what one is able to observe in Manchuria, however, they do not intend to make any radical change in their old-time policy. They are merely marking time.

In order to allay suspicion, the Japanese talk a great deal about withdrawing their troops from Shantung, the Chientao district, and Siberia, but if they really do so they will probably maintain a very large police organization, which will still give them political influence and a degree of control as great as they would have through the em-

ployment of troops. Their promise to withdraw troops should not, therefore, be taken too seriously unless their intentions regarding police control are also known.

VISITS OF WAR SHIPS TO PORTS OF DENMARK.

Source: Reliable.

11 July, 1921.

LETTER FROM SECRETARY OF DANISH LEGATION TO SECRETARY OF STATE.

SIR: With reference to the letter which I had the honor to address to the Department of State on February 21, 1913, regarding the admission of foreign warships to the territorial waters and ports of the Danish Monarchy in time of peace, and to the reply of Mr. Secretary of State Knox, dated March 1, 1913, I beg to forward to you under this cover three copies of a new order on this subject issued by the Danish minister of defense and confirmed by his Majesty the King on May 11, 1921, together with three copies of a translation into French of the said order.

It will appear from paragraph 7 of the new order that with the entering into force of the same the provisions in the earlier order of January 15, 1913 (as amended by order of June 30, 1913), have been repealed in respect of the Kingdom of Denmark.

In transmitting these documents to you I have been directed to add that the Danish Government, with a view to make it easier for foreign Governments to comply with the necessity of a previous notification, is prepared to grant to such foreign Governments the privilege that only one annual notification of the visit of their warships will be required for the following territorial waters, to wit:

(1) For passing to the west and north of the island of Samso.

(2) For the admission of school ships and fishery-inspection ships to harbors in the Faroe Islands.

(3) For the admission of fishery-inspection ships to Esbjerg.

I am furthermore directed to advise you that the provisions of the orders of January 15 and June 30, 1913, are still in force in respect of the ports and territorial waters of the Kingdom of Iceland.

One annual notification will also be considered sufficient with regard to the admission of schoolships and fishery inspection ships to the harbors of Iceland.

I would be greatly obliged to you if you would be so good as to acknowledge the receipt of my present communication, which has

also been made to the American minister at Copenhagen for his own information.

I have the honor to be, sir, with the highest consideration,

Your most obedient and humble servant,

C. BRUN.

LETTER OF THE SECRETARY OF STATE TO THE SECRETARY OF THE NAVY.

19 July, 1921.

SIR: I have the honor to inclose for your information a copy of a note No. 235, of July 11, 1921, from the Danish minister at this capital, regarding the admission of foreign warships to the territorial waters and ports of the Kingdom of Denmark in time of peace, together with a copy and French translation of a new order on this subject issued by the Danish minister of defense and confirmed by the King on May 11, 1921.

It will be observed that the minister states that the Danish Government is prepared to grant to foreign governments the privilege that only one annual notification of the visit of their warships will be required for certain territorial waters, and adds that the provisions of the orders of January 15 and June 30, 1913, are still in force in respect to the ports and territorial waters of the Kingdom of Iceland.

I have the honor to be, sir,

Your obedient servant,

For the Secretary of State,

F. M. DEARING,

Assistant Secretary.

DISPOSAL OF BRITISH NAVAL VESSELS.

Source: Reliable.

(184–A.)

11 July, 1921.

The number of vessels disposed of has recently reached remarkable proportions, and the latest vessels to be placed on the noneffective list to be disposed of as opportunity permits are the vessels of the monitor class. At present there are 14 of these ships in the service, two having 15-inch guns, the *Erebus* and *Terror;* two others, the *Marshall Ney* and *Marshall Soult*, having also had 15-inch guns originally; four others, the *Earl of Peterborough*, *Lord Clivè*, *Sir John Moore*, and *Sir Thomas Picton*, being 12-inch gun ships; and the others being 6-inch gun vessels, except the *Gorgon* (ex *Nadaros*), which was purchased from Norway during the war, and is armed with nine 4-inch guns. Some 40 monitors and coast-defense ships were purchased or built during hostilities.

With regard to the *Lord Clive*, it is of interest to know that this vessel is being used for experimental purposes, and a triple turret containing three 15-inch guns has been mounted, as previously reported by letter from this office. It is understood that at the conclusion of these experiments this monitor will also be placed on the noneffective list for disposal.

In connection with this matter, the Admiralty has recently decided to place in reserve the K class submarines, and it appears doubtful if those vessels of the K class which require any large amount of expenditure to properly refit will ever be placed in commission again. However, there is no definite official information covering this point, although action previously taken by the Admiralty on vessels of the K class requiring large expenditure to properly refit indicates that a number of these vessels will ultimately be disposed of.

THE SCHLIEFFEN PLAN OF CAMPAIGN AND OUR WAR WITH ENGLAND.

Source: Admiral Malzhan, German Navy.

(14716.)

6 July, 1921.

The Schlieffen plan of campaign is an outgrowth of the two-front warfare as presaged by the Russian-French alliance in juxtaposition to the Triple Entente. It was then reported ("Schlieffen," by O. v. Gottberg, in the "Tagliche Rundschau" of February 26, 1920) that its founder in 1904 "already for years" had not doubted England's participation in such a war—the only question was "whether it would be able to be brought about." It should be stated here that the land warfare alone should bring about such a rapid decision that the influence of the British sea supremacy could no longer alter the matter. Was this supposition properly taken? Did our army's superiority in leadership and efficiency balance the enemy's ever-increasing superiority in numbers? Later the comparison in point of numbers developed even more to our disadvantage and made a rapid decision even still more improbable. The German preparations which the change in the general situation brought about by the Balkan War should have made a distinct consideration did not furnish the requisite balance. These preparations had not made full military use of the man power latent in the German people.

The basic idea of the Schlieffen plan of campaign was an advance in northern France through the ignoring of, or the breaking of, the Belgian-Luxemburgian neutrality, while a defensive would be maintained in Russia and on the Alsatian front. Then the attacking

right wing, which would be strengthened and sustained as much as possible, would continue the offensive in France in a southerly direction and, attacking Paris in the west, would precipitate a decision against the French Army and the British auxiliary corps. The principal requisite for the success of this plan was a speed and mass formation which would insure connections with the rear and thereby sufficient reinforcements. In the hand of the genial leader who had conceived the plan, it was believed that success supported by such a procedure would be perfectly sure and that all the political, military, and economic hindrances developing as a result of England's participation in the war could be successfully surmounted. A cooperation of the German fleet was never mentioned. The plan of campaign should become a plan of war.

Then when the murder at Serajewo had set fire to the powder cask in the Balkans things were quite a great deal different to what they were at the time of the crisis of 1909—a preliminary, as it were, to the World War. The Russian-French preparations, the incompleteness of which served to prevent a conflict at that time, were almost completed. England's attitude at the time of the Agadir incident in 1911, made her inclination to war all the more evident. The Entente directed against the Central Powers had become all the more closely united and there was no longer any doubt that the great sea power was not going to lose any opportunity of putting down the German commercial competition. London only awaited a casus belli which would satisfy public opinion and suffice for propaganda purposes at home and abroad.

The German military authorities also held fast to the principles of the Schlieffen plan of campaign. We also hear, to our great astonishment, that the fleet did not even know of it ("The German General Staff in its Preparation and Carrying-out of the World War." by Gen. von Kuhl, 1920) and that the prime minister as well as his political and economic fellow workers and advisors accepted it purely as given.

Did they also all believe that the land warfare was the only decisive instrument and that its quick effect against England's sea supremacy could not last out long enough to prove itself really effective? Was not the prime minister, whose politics to the very last were directed toward keeping England neutral and which "fell like a house of cards" when England declared war, quite clear as to the fact that a plan of campaign that reckoned on the enforced march through Belgium was furnishing England with the desired excuse for war?

At the very outbreak of the war when the Admiralty asked the chief of the general staff whether the army laid great weight on the destruction of the British troop transports to the Continent he received the answer that the fleet could not be bothered in its other

operations by this matter; it was, in fact, quite a good thing if the army in the west could count on 160,000 Englishmen. ("The German General Staff in the Preparation and Carrying Out of the World War," by Gen. Von Kuhl. Berlin, 1920.) That did not sound in the least as if the army had doubted at that time that it would be able to meet all demands made upon it on the western front by the use of the powers at its command; it did not seem to place much value on the effect of the efficient but numerically weak expeditionary corps! Did no one consider the effect of England's further participation in the war? If one was determined on the necessity and feasibility of the break through Belgium with which the plan of campaign stood and fell, then one had also to consider (and with this point I come to the point of the fleet's interest in the plan) the forging of weapons for the unavoidable fight against England's sea supremacy. It was necessary in the interest as well of the land war as of the sea war to institute an offensive along the entire coast at the very beginning of the campaign so that Germany would hold the kern of the nearest communication with England. England's participation in the continental war would therefore be confronted with heavy hindrances, but protected bases could be created for our fleet for an attack against England's water connections with the open sea. Yes, indeed; such a threat against England would have cooled somewhat her ardor for war along with the hoped-for defeat of France, would have probably sufficed to have enabled us at that time to have attained an honorable peace.

The campaign of 1914 did not take into account such an adjustment to the general requirements of the land and naval war. Only keeping in mind the quickest destruction of the French Army and the English Expeditionary Corps assisting it, the German offensive turned off too previously from the coast toward the left. The overestimated general effect on the enemy never led at any time to a real decision on the long front, even though single victories often obliged the enemy to retreat. The French Army was hard pushed and neared the sources of its power, while for us the conditions attending the further advance became even more difficult. In opposition to the leading characteristics of the Schlieffen plan, the pith of the whole was laid too far to the left. The "deciding wing" was too weakly constructed; its strength did not suffice to secure the rear connections which were becoming more and more spread out, and it sufficed even less for the holding back of reserves. It therefore came about that the two army corps released in August through the fall of Namur were taken away and sent to the eastern battle fields. The reserves destined for this "wing" had to be employed in the battle against Antwerp and the Belgian Army concentrated here and strengthened by English auxiliaries, if the danger threatening from that quarter

was not to have a decisive effect on our entire plan of campaign. This was all the more important as a very significant offensive of two armies had been started in the Rhineland and directed against the Meurthe and Mosel in an attempt to break through between Toul and Verdun, and in this way used up power and energy that could much better have been employed in the " decisive wing."

And in this way the northern part of Belgium and the entire Channel coast, which England had always quite justifiably considered as the glacis for military operations against the Continent, remained in the hands of our enemies. A further deviation from the Schliefschen principals must be added to the state of affairs existing between the forces of the " movement wing " and the tasks arising on the frontier of Alsace-Lorraine. The outflanking of Paris on the west and the involving of this great fortification in the general campaign was abandoned. The wing was ordered to pass Paris and to push forward toward the southeast. The foundation was therefore laid for its flanking from the west and for the first Battle of the Marne. This did not lead to the decisive battle (to seek the reasons therefor would take one too far afield) which Gen. Joffre believed it to be in his enthusiasm of victory growing out of his first doubts, but it did mean the end of the German attempt to put the Schlieffen plan of campaign in operation in France. The second great division of the war began, which became for us a war of defense, led to the World War and gave England free reign.

I do not know whether the higher military command in the various periods of the war during the advance on the Marne ever considered the occupation of the Channel coast. But in desiring to end the war as a land war, it was wholly and entirely in accord with the Schlieffen ideas. What might eventually happen in the event of an English offensive was pushed aside as a cura posterior and there was still no German higher naval command whose duty it was to point out this possibility before it was too late. They should never have disregarded this potentiality. We learn from Gen. Tappan (" Bis zur Marne " by Gen. Tappen, who during the war was chief of the operation division of the Army General Staff) that already at the end of August, 1914, there were alarming reports in General Headquarters relative to Antwerp and Ostend. It was reported that Ostend was to become a highly fortified point for England. It seems to me quite in keeping with the ideas of the officials to whom the author belonged that he added this point: " Naturally great care was necessary, but even worse reports could not prevent the advance of our troops."

The same officer took a similar position in a later period of the war. After a " Canna " prepared for the French had again failed to bring about a decision, the question then arose as to the future conduct of the war. The question was then discussed as to whether it were not

better to lay the defensive front more westerly towards the coast rather than the shortest course northerly to the ocean, by employing one of the larger divisions, perhaps on the Somme. Gen. Tappan disposed of the question very briefly as to what would be attained thereby, by saying that this front had also been long and then "there was still the long coast seam to protect; the war would go on by itself." Most certainly it would have done so, but might I add—under what different conditions! The occupation of the coast was all the more desirable because now the war, instead of coming to an end in our favor by means of rapid blows, turned into a war of exhaustion for Germany and its allies. In occupying the Channel coast up to the mouth of the Somme we would have held Dunkirk, Calais, and Boulogne, and it would have meant a completely different basis for the war against England. No attempt was ever made in this direction.

While both divisions after the battle of the Marne were directing their energies to outflanking the enemy, and thereby perhaps force a decisive battle, and with this end in view advanced northwards to the coast, the Belgian Army and a part of the English reinforcements sent to Antwerp by sea succeeded in avoiding being trapped in this fortification of the west. Gen. French, who was only persuaded with great difficulty to send the British Expeditionary Corps to assist the French in a contemplated battle of destruction on October 19, now withdrew it. In a correct valuation of the importance which the occupation of the Channel harbors meant for England and the Allies, he returned his army corps to the coast. Nevertheless, as our defensive front advanced in this direction, it was still possible to press towards the west. But our right wing remained inactive for 10 days in front of the exhausted enemy, solely from a lack of energy in the strategic direction and a false idea of the importance which the occupation of the coast line beyond Calais would have for us. The flooding of the Yser territory made an end of all operations along the entire coast. Important matters were neglected.

The Germans made a great error when they did not occupy the Belgian coast and the Narrows during their first victorious advance. In August, 1914, they could have taken Calais and Boulogne by simply marching in and taking possession. (London Times of October 18, 1918.)

In a public speech after the war Lord French said:

Their [the Germans] basic error, I believe, was the fact that they did not succeed in taking the Channel harbors in the very beginning, and it was our salvation that they did not fortify themselves on the coast when directing their principal blows against the Allied Army. (London Morning Post of May 8, 1920.)

What advantages the German military authorities would have gained almost without effort will not be gone into here in detail. General hints will suffice. If our submarines, which the higher mili-

tary command finally called on for assistance as the last means of bringing the war to a victorious end in a not too distant period, had had bases lying closer to the open sea and more difficult of being shut off, would not other possibilities have been opened up? Would this not from the very beginning have reaped a harvest not only to the disadvantage of England's connections with the continental battle fields, but also in a subsequent unrestricted attack on the merchant fleet of our enemies? Would not a greater confidence in its success have strengthened the German confidence and perhaps during the time that England, moved by the much smaller successes of the unrestricted submarine warfare, trembling thought of peace, have prevented the Reichstag's peace resolution of July, 1917, with all its calamitous effects both on the inside and the outside?

Instead of this, behind the protection of the Yser positions there grew up the great training and war supply camp, in making use of which England could fortify herself for the land campaign. In the roads themselves, and having its efficiency increased through the support of the two coast lines, the so-called Dover Patrol Fleet Division was created, which, augmenting the position of the Main Fleet in the North of Scotland, cut off the North Sea from the open sea. Only in these narrow straits with their shallow depths was it possible to lay really effective hindrances of all sorts to which so many of our submarines fell victims. Then began Germany's isolation from all assistance from the outside world. It not only brought about the hunger blockade which deprived us of the power and will for our resistance and crushed the energy of the people, but it also caused a lack of raw materials of all kinds which, the more the technical side of the war increased in importance and significance the more disastrous effect this had on Germany's land, air, and naval war policy, while the enemy had the assistance of the entire world at their disposal.

It would be quite wrong, and I also have no intention in this short review of events of blaming the Schieffen plan of campaign and its subsequent application for all the results of the failure to occupy the Channel coast. It should also be considered in how far the failure to have a higher German naval direction and a political policy, uniting the land, naval, and economic warfare in a really effective coordination, also played its part in the matter. I also wish to mention the fact that the people in England are of the opinion that no other State entered the war so well prepared as England (in contrast to Germany), which in its Committee of Imperial Defense possessed an instrument which united various mediums of the Mother country and the colonies having to do with the war, its activities and preparation, into a governing unit.

Nevertheless (and with this I come back to the point as to the importance of the Channel coast), it is also questionable whether England would have succeeded already in September, 1914, in making its Allies agree to sign no separate peace without its consent if this very advantageous base on the continental coast had not enabled it to take part in the land warfare in an ever-increasing measure.

The union of our enemies in the World War against the Central Powers rested, besides the supremacy of the sea and the blockade of the North Sea, principally on this bridge between England and the Continent.

But the enemy was not content with these prospects of a final success; there was no lack of sharp critics and a feeling of security could not be engendered.

Since the failure of the precipitant attempt to hold Antwerp through English assistance and the pushing of England's continental base farther eastward toward the Schelde, its creator, the Naval Minister Churchill, was subjected to the sharpest criticisms. Also the concentration of the Grand Fleet near the Orkney Islands for the extensive blockade of the North Sea instead of a narrow blockade of the German harbor was also criticised and a really effective success by means of these half-way measures was very much doubted. As a matter of fact only through a violation of all principles of naval warfare toward Germany and the neutrals could render the blockade (which was really an unjust act of force) really effective. But Winston Churchill here again comforted the English people. In the Guild Hall on November 9, 1914, he made the following speech:

> It is very difficult the first period of the war to gauge the real effect of naval pressure. Economic subjection requires time before its effect can be felt. We only begin to see it in the third month. Only have patience.

And he was quite correct.

To the pseudo-Schlieffen opening of the World War, I would join the Hindenburg-Ludendorff close. The idea has steadily gained ground that the ocean and its connections was the basis of the general war policy and that England was the chief enemy. The war that had been forced upon us against the outer blockade by sea, had indeed enlarged the land basis of our war policy and brought us a partial substitute for the lacking imports from the open sea—but it had also forced us to distribute our land forces more and more over a broader territory. Along with the enemy's lack of tonnage through the submarine warfare, it caused us a scarcity of traffic accommodations on land, and, in spite of the advances against Serbia, Roumania, and Italy, it restricted our submarine bases into the inner bays of the Mediterranean and its adjoining waters. And, therefore, in the spring of 1918 there began the great closing offensive of the land war as a last attempt. England had become ever more and

more a powerful enemy through the introduction of conscription in the Mother country and the colonies, even if France did come first on the Continent on account of its fanatical war spirit and the direction of its armies. The higher military command had now learned to rightly consider England as the chief enemy on the whole, and as the connecting link in the chain of our enemies. Must not consideration be paid to this in thinking over the contemplated offensive? The dangers threatening from America also rested on the British naval supremacy.

The first thing in connection with the offensive in the spring of 1918 was the regaining of operative freedom of movement from the shackles of the trench warfare. At that time, as at all times of the war, the tactical victory was the goal, and therefore the position of the enemy armies to each other and the territory, as well as the qualities of the latter, and all had to be considered. But the general strategical viewpoints still remained predominant, and here again England and its army took a special position. Its relations with the Channel coasts took on new significance, so that the consideration as to whether it was more correct to force the English from the coast and in this way endanger its connection in the rear, or to throw them back on the coast and force a catastrophic debarkation, took on great importance. Here the activity of the German fleet could also come into question. England's significance as the connecting link in the World War was not to be forgotten in these local considerations. A serious defeat of its armies in the west would have made itself felt on all four fronts, everywhere where there were English troops, begininng in Murman and passing over to Siberia down to Mesopotamia, Syria, and Palestine as far down as Macedonia.

Therefore, from general strategical grounds, one can only criticise unfavorably the decision of the higher military command to leave the trench warfare and begin an offensive in the northwest. This was directed against the enemy's positions from Amiens to Kemmel, and also against the Channel harbors. Let us take a few comments from the camps of our enemies.

The loss of places like Calais and Boulogne would put an end to the submarine blockade diagonally across the Narrows which has recently proven so admirable for us, and has formed the basis of our submarine strategy. Furthermore, we would have to use Havre for transport purposes for which Calais and Boulogne have previously been used, and in this event, the sea journey would be increased fourfold. If the submarine warfare should ever finish the war in Germany's favor, the loss of the Channel harbors would only hasten the end. At the very least the Allies would have to delay immeasurably the speed with which the American troops and their reserves would be brought to Europe. (New Statesman, April 20, 1918.)

It is comprehensible that it would deeply grieve us if the loss of Kemmel would lead to a further retreat by Ypres, and finally to the loss of the Channel harbors. (Manchester Guardian, April 27, 1918.)

But it did not come to that. In spite of the great losses that it caused the enemy—losses which had a staggering effect in London and Paris and caused them to call speedily for help from America—it had no really decisive result, to draw strong enemy forces in that direction, in order that the temporarily interrupted northwest offensive, which was not lost sight of, could be taken up again. The second battle of the Marne then brought about an entire change in the whole situation and caused the final abandonment of this extensively laid plan, through the success of which and supported by the effect of the unrestricted submarine warfare the higher military command had hoped for a final victory or the attainment of a success which would assure an honorable peace. Considerations that had to do with the relations of the land and the naval war, referred to comprehensively as "our war against England," had entered into the decisions for this extensively planned period of the war. But the unified naval direction created at the end of the war had not taken any part in it. Admiral Scheer had only entered on the post at general headquarters that kept him in continual contact with the Kaiser and the higher military authorities a few days after the events of August 8 had changed our land warfare into an unquestionable defensive.

The general retreat of our Army out of France and Belgium began and finally once more the connection between land and naval warfare was allotted an import task. An attack was planned by the German High Seas Fleet for the support of the retiring right wing of our land positions—this attack to be assisted by an extensive employment of submarines which would be released, because, against the will of the army and navy, the unrestricted submarine warfare was abandoned for political reasons. This advance was intended to prevent English attacks from the sea, and if it came to a battle, to change the general conditions in our favor through injury to the British fleet. But this also did not come about. In how far our military forces were sown with the seeds of smouldering revolution had already shown itself in the army. The divisions returning from the front called the outgoing divisions "strike breakers." It can be seen that things were brewing, preparatory to falling on our military command with the idea of engaging them in a strike contest in the rear. Then several ships of the high seas fleet "struck" just as the attack was to begin. Mutineers refused to perform the work necessary for making the ships ready for sea. The torpedo-boat flotillas and the submarines, of which a portion were already out, were ready for battle, but their crews were already imbued to a large

extent with the revolutionary spirit; the cooperation of fleet and army became impossible and the eventual downfall unavoidable.

The short résumé given in this article touching the course of the war has shown us what the undervaluation of the "working out" of the general effect of the British naval forces played in the war. That America finally became the "decisive element" (Ludendorff) is also all in the question, and would have been impossible without England. The downfall of Bulgaria, which "threatened to put Austria and along with it our left wing at the mercy of the Entente," all entering into the final decision, can be attributed to the outer grip of the Mediterranean already mentioned several times and dependent on England's supremacy of the seas. This relationship was now recognized by the leading personalities. At the beginning of the war and in the making of the plan of campaign our military command, even as their great pattern Clausewitz also did in Napoleonic times, passed over "with closed eyes" the relation of the sea and its influence on the course of the land war. Finally, when the course of events taught them differently, in many ways it was too late for a change.

I now come to a short summing up: The Schlieffen plan of campaign did not bring us victory over France and the hoped-for peace. If we seek the real military reason for this in ignoring the battle on the two fronts and the political and economic reasons of the World War, then I would like to classify them as follows:

1. Numerical superiority of our enemy.
2. Insufficiency of the direction and leadership, which Hindenburg called the "watering of the Schlieffen plan."
3. Failure to fulfill the requirements for cooperation with the naval war which should have served as the basis for the war against England, if the sea was not to conquer the land.

What could now have happened to prevent such a failure? If I again turn to military reasons for the answer to this question, my answer would be "attention to what was to be attained by employing all our powers, and exercising a cooperation between land and naval warfare with restricted goals for both. For the land war, according to the Clausewitz ideas, this would be "conquest of a portion of the enemy territory"—here about to the Somme in Belgium and France—as the safest protection of our possessions on land. (Limited goal in a war of offensive in order to prevent the dangers threatening from a passing of the culmination point of the victory—Clausewitz.) For the naval war must be considered offensive against the enemy commerce in unrestricted submarine warfare as the fleet command already advised in November, 1914. (The real ideas relative to the "unrestricted" submarine warfare were not quite established at that time; it was desired to employ the submarine, in a way com-

mensurable with its peculiarities, in a contest against England's naval direction so contrary to the principles of international law.) As a basis for this, the Channel coasts occupied by our army and a liberty of action in the North Sea attained for us by our fleet, would have satisfied all requirements. The gradually developed manipulation of the battle fleet, which development reached its culmination in the battle of the Skaggerak, led the right for this. To force England into a naval contest over the supremacy of the sea was quite impossible owing to the existing difference in strength.

The answer to the question as to what should have happened to prevent our failure in the war may appear entirely irrelevant. If I have nevertheless taken this as my closing, this has been done to avoid the reproach of only having exercised fruitless criticism in this work. There is no absolute certainty in war. What I here suggest appears to me only a possible attempt to have attained with our utmost means a nacceptable peace, and even in war the saying is still valid: "Seize time by the forelock."

MISCELLANEOUS NOTES, GREAT BRITAIN.

Source: Reliable.

(14574–B.)

13 July, 1921.

In private conversation with a man known intimately to the writer for many years and who has been attached to the royal family for some time past, it may be deduced there is considerable anxiety as to the health of the Prince of Wales and as to his political future. The authority referred to has been personal adviser to the King in all matters affecting publicity and the press, and it may be said he has done some remarkable work in breaking down the conventional attitude of the royal family to the public at large and has greatly benefited the Government through his work. The King has expressed his fear that the Prince of Wales in his visits abroad has gone so far in the matter of "hail fellow well met" as to make things very difficult for him when he comes to the throne. He has even gone so far as to say that the Prince when he becomes King will never be able to visit Canada. From the American point of view it will probably be difficult to understand why this is so, but from the English point of view it may be taken as a reasonable fear. While it is true that King Edward made himself very popular through his democratic manner and conduct while he was Prince of Wales, he never went so far as the present Prince of Wales in his public actions or associations, and when he did become King he was able to disassociate himself effectively from all embarrassing friendships and incidents pertinent to his career before he came to the throne. The King has expressed the

conviction very decidedly that the present Prince of Wales when he comes to the throne will find it impossible for him to make any royal tour in the overseas possessions. It must be remembered of course that the present King was brought up and still exists in the atmosphere of tradition and convention which still surrounds royalty in Europe, and by the time the Prince of Wales comes to the throne it may be that the King's present fears will prove unfounded.

It has been suggested in high quarters a number of times that the possibility of King George abdicating in favor of the Prince of Wales at some future time was not an improbability, and it is believed by many who are in touch with the royal circle that much of what the Prince of Wales has been doing on his travels has been to pave the way for him to become a popular constitutional monarch of a democratically governed empire.

The present King George did not want to come to the throne at all, and the death of the Duke of Clarence was probably the greatest blow he ever received. He is a very pleasant and kindly English gentleman who finds much more happiness at sea and in country life than he does in the formalities of the Court. He has worked very hard ever since 1914, and would probably welcome any opportunity which presented itself for him to put the burdens of state on the shoulders of his son and allow him to live the life of an English country gentleman, which he prefers to that of Buckingham Palace.

There is a certain amount of antagonism to the King in the country districts, and in some of the Provinces of England he has been criticised considerably for not coming more among his people. This feeling does not exist in London, but in the midlands and outside of the larger cities it is felt that he has neglected the rural communities in favor of the larger centers of population. The Prince of Wales is now touring some of the counties in England where this feeling against King George has been the strongest in the endeavor, and acting under the advice of the Government, which controls the movements of royalty, to correct the position.

The present Prince of Wales is not a man of strong physique or character, and he has unquestionably led a most strenuous life for some months past, the kind of life which is extremely wearing, being one of travel and entertainment. He is keen on sport but has not had full opportunity to keep himself physically fit. Personally he gives the impression of being a man of weak physical stamina, and his family are notoriously so afflicted. His father is not at all a strong man, and the probabilities are that were it not for the greater physical strength of his mother he would have been unable to stand the strain as well as he has. It is now announced that he will have two months holiday before he goes on his trip to India. His health is

being carefully guarded and the Government is extremely anxious concerning him. He will do as he is told, but the Government is acting under the advice of the friends and physicians who are in touch with the royal family. The Prince is extremely popular and has a very charming personality. He is not a man of strong personality, however, or of strong convictions, or of great mental development, which perhaps is just as well, as under the present form of Government in England, which to continue must subordinate itself to the constitutional or parliamentary power. If the Prince of Wales keeps his health and comes to full maturity with unimpaired powers, there is probably no man who would better suit the present political conditions.

The question of his marriage is causing wide comment. No Prince of Wales has ever remained single as long as he has. After the armistice there was a considerable burst of publicity in the newspapers demanding that the Prince of Wales should marry an Englishwoman. To do this it would be necessary to alter the royal marriages act, as he could not legally marry anyone except a royal princess. The matter came to a head not long ago when the Government was interrogated in the House of Commons as to whether any change was to be made in the royal marriages act to enable the Prince of Wales, if it was desired, to marry a commoner, or in other words some one who was not of royal blood. The Government announced that there was no intention on its part to introduce any bill to amend this law. This apparently has put a stop to all discussion of that kind and the public waits to see what is going to happen as the supply of royal princesses in Europe at the present time is somewhat short of the market.

For some time past there have been rumors of a projected change in the ownership or control of a prominent English newspaper which has been more or less unfavorable to the Government of the United Kingdom as represented by the prime minister, Mr. Lloyd George. Fleeting paragraphs have appeared in the English and continental papers, but no one has seemed to be able to say which paper was concerned. These rumors have been founded upon what is actually taking place in connection with the London Times. The London Times for some years past has been controlled and was believed by the public to be owned by Lord Northcliff. In the information sent by the American Embassy in London to the State Department concerning the ownership and status of English newspapers, it has been stated that Lord Northcliff owned 55 per cent of the stock of the London Times. This information is incorrect. When Lord Northcliff entered into the Times he purchased somewhere in the neighborhood of 30 per cent of the stock, but this sale was made to him and he entered into the arrangement with the

understanding that he was to come in as a practical newspaper man, reorganizing the paper and if possible putting it on a paying basis. His influence was felt immediately. The paper was improved from a journalistic point of view and was made into a more or less successful business proposition, rather than a losing institution which, although of limited circulation, carried great weight with everyone not only in England, but elsewhere.

When Lord Northcliffe took over the Times the circulation was less than 25,000 and it was losing money. The other 70 per cent of the stock in the paper was owned by the heirs of the Walter family, the original owners, the paper having been founded by the first John Walter. For the first time in many years the shareholders began to receive dividends upon their holdings and were apparently well satisfied with the arrangement. Three years ago the Times made a profit of about £60,000 and continued to make a profit up to last year. It is understood that this year the property will show a loss. Lord Northcliffe, with characteristic inconsistency, lost a good deal of his interest in the enterprise when he found he could not control the policy of the paper in every detail. He is a man of impetuous and dictatorial habit and in all of his own publications he has had unrestricted sway. He has been irritated by the manner in which the Times directors and executive officers have either modified or entirely ignored his wishes in some respects and now, on the plea of ill health, he is going to get out of the paper. His financial interest in the paper, it is understood, will be taken up by certain wealthy business men who are backing the prime minister in his political career and policies, and it is probable that before long the announcement will be made that the paper has changed hands. The excuse will be given that Lord Northcliffe's health no longer permits him to give proper attention to the Times and that he is compelled to withdraw. The present John Walter will probably be more or less in control of the paper. He is a very pleasant gentleman, but a man who lacks force of character and is without much of the ability which marked those who preceded him in the Walter succession to the ownership of the Times. This change in the control of the Times is probably the most important thing which could happen in the English newspaper world and may have considerable influence upon political events in the United Kingdom in the near future. The policy of the paper in the future will be that of the prime minister. This being the case, it is safe to estimate that the paper will be pro-American to a large extent, inasmuch as the whole policy with the British Government is to produce if possible a complete entente with the American Government and the American people. The control of the Times by Lord Northcliffe was a decidedly favorable element in Anglo-American relations, because Lord Northcliffe

is a firm believer in a close cooperation on the part of the two Governments and the two peoples and it is probable that under Northcliffe's management the Times would have continued more enthusiastically for America than it may under its proposed new ownership. There is not much danger, however, of any journal of weight and influence attempting to put sand in the gear of the Anglo-American relations, as the whole tendency at the present moment is to make things run as smoothly as possible and to draw the United States into as close relations with the British Government as can be brought about.

No public announcement has yet been made of the above suggested change in the Times, but it can be accepted as reasonably sure of coming about within a short time. That at least is the present plan and negotiations are proceeding along the lines suggested.

GENERAL CONDITIONS IN HAWAIIAN ISLANDS.

Source: Reliable.

(11278–C.)

5 July, 1921.

During the month of April, 1921, the arrivals and departures of Japanese for the Hawaiian Territory were:

Total incoming	449
Total outgoing	452

According to best informed persons returning from Japan, numerous Japanese have returned to Japan during the past year with their large earnings of the past few years, have expressed a desire to return to Hawaii to work on the sugar plantations. In nearly all cases reports indicate that the laborer who returned to Japan from Hawaii with several thousand dollars and who expected to live comfortably the rest of his life has been sadly disillusioned, as he has found the cost of living in Japan extremely high and conditions in general, with numerous strikes and much unemployment, very unsatisfactory. Letters have been received in Hawaii from Japanese who have gone back to Japan indicating their desire to return to Hawaii, and this undoubtedly is having a big moral effect on the Japanese laborers here. It is reported that for some reason unknown to Japanese in Hawaii, the Japanese Government is discouraging immigration to the mainland as well as to Hawaii.

It is reported that the reorganization of the Hawaii Laborers' Association (Japanese) is now a certainty. Their financial situation would not allow maintenance of numerous salaried officials. Upon reorganization of the association, the labor federations and the local labor unions will also be recognized. This "reorganization" is forced by the virtual disruption of the old Hawaii Laborers' Asso-

ciation, which was caused by financial difficulties, poor management, and alleged crookedness of officials.

On April 21 an interview was given by Consul General Yada to a reporter of the Star Bulletin and published by that paper. It has since been learned that the consul made certain statements which he—the consul—desired suppressed. The following is quoted from a confidential interview given by the reporter who originally secured this interview and includes the statements made by the consul to this reporter and which he requested be suppressed:

After Mr. Yada had spoken to the effect that war between the United States and Japan is unthinkable I asked him if there was any other likely cause of war between the United States and Japan. He replied: "Yes, if the American fleet should maneuver in Asiatic waters the Japanese would regard this as an act of intimidation and it might lead to war." I then asked him if a visit of the American fleet to the Philippines would be regarded as an overt act by Japan. He replied in the affirmative, saying that he had no doubt that such an act would precipitate a conflict.

Consul Yada said that he believed the United States was suffering from war fever produced as a result of its waging a successful war. This condition existed in Japan at the conclusion of the Russo-Japanese War, he added, saying that it is a feeling experienced by all nations which have just emerged from a successful war. "In five years the United States will be one of the most militaristic nations, while Japan will be one of the most democratic," he added.

In connection with the published Associated Press reports from Washington relative to the recalling of Japanese between the ages of 21 and 36 from Siberia, China, the East Indies, India, and the Philippines to Japan for military duty. Consul Yada said that this was merely to broaden the territory from which the Government recalled these men; that previous to this year men in the Philippines and some of the other countries had not been recalled due to poor transportation facilities. Consul Yada expressed the opinion that he did not think it unlikely that, if the transportation facilities were improved, the order would be extended to apply to Japanese in Hawaii and possibly on the mainland. After making this statement, Consul Yada asked that it be suppressed.

DETERMINING FACTION IN A WAR BETWEEN JAPAN AND THE UNITED STATES.

Source: A Student of Conditions in the Far East.

(14698.)

4 May, 1921.

General Strategical Considerations.

This will be a war about "policy"; that is, it will be because the Governments differ as to their fundamental objectives, and can find no way to reconcile them. Given such a divergence, it is of slight moment what the immediate occasion of the rupture may be.

The character of this war, combined with the geographical position, will require the United States to take the "offensive," and places Japan on the "defensive" strategically; in other words, Japan

will be, at the opening of hostilities, in possession of the elements that control the issue of policy, and it will be necessary for the United States to dislodge Japan from that position in order to win the war.

In this war the sovereign territories of both belligerents are practically immune from invasion by the enemy; therefore the war can not be brought to a decisive conclusion by a military penetration of enemy territory or by breaking down at its center of energy the military force of a belligerent. The most either belligerent can accomplish by direct military action may be to attack and seize some outlying possession of the enemy.

It is not possible for Japan to penetrate the sovereign territory of America, nor to force the United States to submit by wearing away her war-making powers, for the United States contains secure within its own territory all the essential elements required to wage modern war. On the other hand, Japan does not contain within her own sovereign territory all the required elements, nor a sufficiency of them, to wage a prolonged war against a first-class power.

Nevertheless, in this case Japan might substantially win a war against America, by being able to prevent herself fro mbeing ousted from control of the factors which determine the question of policy at issue, for these factors lie almost entirely in the Far East. Therefore, Japan can only be defeated by *economic and financial attrition*, applied by stopping her seaborne communications and commerce, by cutting off her supplies of food and raw materials, and by stopping her exports.

A survey of the position indicates that, to win such a war, the United States *must* have these factors:

1. Complete control of the sea.
2. Complete control of the air.
3. Allies on the mainland of Asia.

These factors are placed in their essential order. Unless the United States has at the beginning of the war, or secures the control of the sea (which means, in this case, control of the sea in Asiatic waters), it will be impossible to obtain the necessary factor to win the war. The factor therefore depends on the first.

Control of the sea in a war between America and Japan must be determined by naval and military experts, but in the opinion of the writer, the following is set as the minimum:

(*a*) A naval force double the strength of the Japanese Navy.
(*b*) A secure naval base in far eastern waters.
(*c*) Adequate wireless communications.

Relation of China to the Problem.

China will be the decisive factor in a war between Japan and America about policy in the Far East. It is from China that Japan

must, in a prolonged war, draw largely for supplies. If this source of supply is stopped, Japan must in the end lose the war.

The prevailing sentiments of the Chinese are very antagonistic to Japan, and in such a war popular sentiment will be overwhelmingly in favor of America. On the other hand, Japan controls or influences (usually by purchase) a number of the important Chinese tuchuns (generals), who in turn control the existing Chinese military organizations. An overwhelming majority of Chinese will *hope* for America to win; but in the beginning they will be dubious of that result, and will be constrained for various reasons to maintain an attitude of careful neutrality, until the trend of events gives a distinct intimation of the outcome.

Relation of Russia to the Problem.

The relation of Russia (especially Siberia) to the problem varies from that of China only in degree. Vis-à-vis Japan the sentiments of Russians are substantially the same as those of Chinese, and for similar reasons. Siberia is a source of supply, for Japan, of certain food products and raw materials. In the event of war between Japan and America, the Siberians (who in this case will be backed by European Russia if American diplomacy handles the situation with any skill) willingly will enter the war on the side of the United States, provided a situation where they can do so opportunely is created. In Siberia, however, as in China, Japan has under pay a number of Russian military adventurers, and it can be expected that she will endeavor, through them, to prevent Russian sentiment from taking a turn adverse to Japan. The hatred of Russians for Japan is such, however, that it is necessary only for a practicable means to be provided, for them to enter the war against Japan.

Japan's Moves on the Outbreak of War.

Immediately on the declaration of war (probably anticipating a declaration by some days), Japan will move to establish herself in secure military possession of Manchuria, of the pri-Amur region, and of eastern Shantung. She already is practically in control of these regions, and of the railway, therein.

(Note.—Japan now entirely controls and "polices" with troops the South Manchurian Railway, connecting with the Japanese railway in Korea at Antung, and with Port Arthur and Dalny; the railway from Tsingtau to Tsinan, in Shantung; the port of Vladivostok and Spaskoe (Sparkoe) in Siberia, with the railway connecting those towns.)

It may be expected in the event of war, that Japan will take control of the Chinese Eastern Railway; also, Japan will seize all mines, etc., in those regions. Japan has made complete preparations for a quick occupation of these railways and regions; in fact, already is

practically in occupation of them. It will not be possible to prevent Japan from accomplishing this, and a complete military occupation can be made effective in two weeks after war is declared.

It is a question whether Japan will, in such a war, also seize the Peking-Mukden Railway. This of course would be an open violation of China's neutrality. A strict respect for China's neutrality requires that Japan can not use the Manchurian and Shantung railways for military purposes; but it can be expected that Japan will disregard China's neutrality in that respect.

(NOTE.—In this connection, there is a possibility that Japan has a secret agreement, or "military pact," with China permitting her, in the event of war, to occupy those railways and regions. Such an agreement might have been obtained secretly, by bribery or coercion, while the Afuites controlled the Peking Government, or from Chang Tso-lin. It may be anticipated that, when war breaks out, Japan has provided a number of so-called "agreements" designed to give legality to her invasions of the neutrality of China and Russia. That the "agreements" are forged, or otherwise illegal and irregular will not matter in the least; they can be made momentarily useful for Japan's propaganda to masquerade her aggressions. Whether or not such "agreements" exist should be made subject for investigation by American intelligence officers.)

In respect to the Peking-Mukden Railway, an occupation by Japan presents international difficulties. It should be borne in mind, however, that Japan may have offset these difficulties in a measure, so as to feel safe in moving in this matter, by secret clauses of the alliance with Great Britain. By the terms of the international protocol of 1901, some American troops are stationed along the Peking-Mukden Railway, to assist in guarding communications between Peking and the sea. Also, by that protocol, there is a detachment of American marines at Peking, quartered in the American Legation grounds. Also, there is a wireless plant in the legation grounds, capable when completed, of communicating directly with America, and all American wireless stations in the Pacific Ocean. It may be that Japan will disregard the international amenities, and seize this wireless plant, and also will attack and capture the American Legation guard, and the American garrison for the railway protection. Japan's previous conduct in many instances give reason to expect that she may take these measures.

There is a project to construct, under American management, but for the Chinese Government, large wireless plants, at Shanghai, Harbin, and other points in China. It can be expected that, in the event of war, Japan may seize or attempt to control these communications.

It also can be expected that Japan will, immediately on the outbreak of war (or before war is declared) try to cut the cables of the Pacific Commercial Co. This, of course, is a legitimate act of war.

It also can be expected that Japan will attack, or make a naval demonstration (this, of course, depends on the prewar naval dispositions of America) on the American naval base in the Philippine Islands. How successful such an attack is will depend on the preparations of the United States before war is declared. Possession of such a base is *essential* to American success in the war.

Except for a Japanese naval attack on American naval bases, all of the above-mentioned measures are possible of accomplishment by Japan very quickly after war is declared, and can not be prevented by American military and naval forces. A study of a map of the regions indicated will show that these moves will establish Japan in complete control of a large area of China and of eastern Siberia. Those regions are very accessible to Japan by communications that are hard to interrupt. It is probable that in addition to the entire Japanese Navy based in those waters, the straits connecting with the Japan Sea, and the Gulf of Chihli, will be mined and otherwise placed in a state of defense, so that Japan can maintain uninterrupted communications with Siberia, Manchuria, and north China.

The geographical position in this locality, taken with the known and potential strength of the Japanese Navy and Army, thus established a situation which is impossible for the United States to impair, *except with the aid of allies on the continent of Asia.*

Under these conditions, Japan can throw any amount of troops into Manchuria, Shantung, Siberia, and Korea, and can supply them there.

However, the necessity to take these measures requires the mobilization and maintenance under arms of a large army, to secure to Japan the supplies of those regions, and more especially to guard against attacks from those quarters; and this will add enormously to the cost of the war to Japan, increasing the financial drain on her resources.

Contravening Action by the United States.

The only effective strategy for the United States in a war commenced under these conditions is to attempt to draw a ring around Japan and gradually to tighten its pressure until Japan yields. This requires that China and Russia be brought into the war as allies of the United States. At this point of the discussion, it is pertinent to state a dogma, which, in the writer's opinion, covers the situation: *The longest purse will win the war.* This, of course, is not to say that the longest purse alone can win this or any war; the purse must be backed by determination and intelligent use of the opportunities, in respect to all factors involved.

From the time when war is declared, or when it appears to be inevitable or likely, the policy of the United States should be directed to two principal objects:

(*a*) Concentrate in the Pacific Ocean the naval forces sufficient to secure effective control of Asiatic waters, and supplement those forces with all necessary equipment and appliances.

(*b*) Pursue a course calculated to bring China and Russia and eventually Korea into the war as allies of the United States.

The first object (*a*) is for the naval and military experts of the Government to decide and organize.

The second object (*b*) may be divided into the following heads:

1. Intelligence work.
2. Propaganda.
3. Economic bearings.

Intelligence Work.

It is assumed, in view of the conditions already stated, that when war commences China and Russia (Siberia) will consider it expedient to declare their neutrality; and it is perhaps wise, under the circumstances, for the American Government to advise China and Russia to take that course. American diplomacy should, all along, endeavor to give their potential allies wise diplomatic counsel, both in order that they may take correct courses, and to enchance the influence of American diplomats with them.

By declaring their neutrality, Japan is thus forced, at the very beginning of the war, to take action which must have the effect of estranging Chinese and Russian sentiment, viz, by violating the neutrality of both China and Russia in the seizure of railways and occupation of territory. This act of Japan also can be used by American propaganda as showing the unscrupulousness of Japan, and comparisons can be made with Germany's invasion of Belgium and Luxemburg. Thus Japan will begin the war by a series of acts affronting the Chinese and Russians, and also enlightened opinion of civilization.

America has, next to Japan, the best nucleus for an effective intelligence organization in China. The 8,000 Americans in China (many of them missionaries) are distributed in every part of the country, many of them speak the Chinese language, and their relations with the people are on the whole friendly and cordial. The means to organize them into a good intelligence force at once suggest themselves, and need not be given in detail. A certain character of information work, requiring technical knowledge and special training, must be done by selected men; most of them probably drawn from the Navy and the Army. It should be the duty of the intelligence branch, by close coordination with the diplomatic branches

of the Government, to establish liaison with leading Chinese officials, and with Chinese (and Russian) military officers, with a view to aligning them with America in sympathy and interest, and to use them if those countries enter the war. The intelligence division should be provided with *ample funds.*

Propaganda.

The general objects of the three divisions mentioned are identical, and propaganda is the *publicity* method employed to accomplish the same things that the intelligence division does privately.

Propaganda may consist of various forms of publicity—telegraphic news, pamphlets, newspaper publicity in all forms, in the English language, Chinese, and other language publications in the Far East; news services, etc., motion pictures and illustrations.

To conduct such propaganda successfully it should be directed and conducted, as far as is feasible, by men who are experienced in the Far Eastern newspaper and publicity field, who understand the currents of opinion and thought, the true attitudes and policies of Governments there and in respect to the outcome of such a war; the local conditions, prejudices, and personalities, and the avenues and means of communication. In such a propaganda it would be found necessary to organize and deliver telegraph news services in several languages; to purchase or subsidize newspapers; to establish outright or purchase newspapers; perhaps to establish or purchase printing plants; and to create a complete organization for reaching every part of the East and every grade of intelligence. The propaganda division also should have *ample funds.*

Economic Bearings.

This division should be composed of and directed by experts in the purchasing and transportation of commodities, and its work should be principally to prevent and deter products of China and Siberia from reaching Japan, and to interrupting all forms of Japanese commerce with these countries, early in the war, when it will not be feasible to interrupt by force the acquisition in China of products by Japan, by purchasing or "buying up" all those commodities. This could be done through firms of neutral nationality, operating in collusion with Chinese merchants. In the same way a watch can be kept over shipping facilities, etc.

Additional Factors.

It is evident that the outcome of such a war can be seriously, perhaps decisively, affected by certain apparently extraneous elements. Of these, the most important is the Anglo-Japanese alliance. (NOTE.—This assumes that the alliance will be renewed, which now seems a foregone conclusion.) The essence of the alliance is a di-

vision of the whole of Asia, as between Japan and Great Britain, into "spheres," wherein each agree respectively to refrain from encroaching upon the other, and agree further to assist each other in repulsing encroachments or infringements of other powers. Just where the line of demarkation between the Japanese and British spheres is can not be stated positively now, but the boundaries are pretty well indicated by conditions and circumstances.

When the alliance is announced, it is certain that a calculated effort will be made to convince the United States that there is nothing in the alliance to cause any uneasiness to America, and that in the event of war between Japan and America, Great Britain will remain neutral. It is probable, however, that some clauses of the alliance will be kept secret; and that the alliance will contain a clause, perhaps ambiguously worded, to the effect that in case Japan is attacked in the Far East by more than one power, then Great Britain is to come to her assistance. There was such a clause in the original Anglo-Japanese alliance.

The effect of such a clause will be to prevent America from obtaining any allies in the war; and as America can not secure a satisfactory result except by obtaining allies on the continent of Asia, *the alliance thus would be just as much designed against America as if it stated that openly.*

The extent to which Japan will feel it is safe to go in occupying China's territory and railways, in seizing Chinese property, and in other violations of China's neutrality, in the early stage of the war, probably will be determined by secret clauses of the Anglo-Japanese alliance, and by the secret demarkation of the Japanese and British "sphere" as fixed by it.

To a certain extent, Japan's moves in the next year will indicate the true content of the Anglo-Japanese alliance by showing how far Great Britain has agreed to support Japan in aggressions upon China and Siberia.

JAPAN—AN EMPIRE BUILT FOR WAR.

Source: Clipping from Chicago Herald.

Americans who scorn talk of any possible trouble between this country and Japan, who jeer at the necessity of a united fleet, of adequate naval bases on the Pacific, and of a firm policy and practical plan for the prevention of such trouble, are fond of bolstering their position with the assertion that *the Japanese are an industrious, peace-loving people, moved by a world reaction against war and actively opposed to a militaristic policy in their own country which would precipitate trouble with the United States.*

For the benefit of such opponents of American preparedness and for all Americans who have given the question neither study nor

thought, it is well to explain that even if they are right they are wrong—that is, *even if the rank and file of Japan are opposed to militarism and national aggrandizement, they are helpless to prevent the development and execution of such a policy by the Japanese Government as now constituted.*

The leaders of Japanese thought and action are monarchists and militarists of the purest ray. What the mass of the people want need have no practical influence on what they will get. The Japanese constitution, formulated by Prince Ito, after careful study under Bismarck, carefully provides that the heaven-sent power of the Emperor shall not be disturbed by any modern peaceful ideas of the coolies and that this son of heaven shall continue to exercise unlimited control over the army and navy which keep his policies, his powers, and his retainers safe from either the bourgeoisie or the proletariat.

For example, *the first section of the constitution gives the Emperor sole and absolute right to determine the weighty matters of making war or peace and of concluding all kinds of treaties. He may even place the whole Empire under martial law and thus suspend the constitution.*

In an occidental state this power would be limited by placing the matter of raising funds for payment of army and navy in the hands of congress, parliament, or diet, representing the people. Not so in Japan. *There the Emperor not only fixes the salary of every officer or official, but the money for their support is authorized by himself without reference to the Diet.* And if any subject objects he may be referred to the bill of rights in the constitution, which provides that "Japanese subjects shall, within the limits of the law, enjoy liberty of speech, writing, publication, etc." Note the phrase "limits of the law." That means that *Japanese subjects may enjoy exactly such liberty as the Emperor sees fit to have granted to them.*

The Diet not only has no voice in the regulations concerning the manning, equipment, and size of army and navy forces, but it may not even reject estimates as to the necessary expense entailed for their upkeep. Neither can it rebuke nor hamper the Emperor greatly by refusing to pass a budget for other purposes. The civil service is under control of the Emperor in the same way as the army and navy, so that all normal functions of government can proceed in an orderly manner without support or appropriation by the Diet. More, the constitution provides that in the event a new budget is not passed the old budget continues in force year after year. *The army and navy can be quadrupled and the Diet have no means of redress even if it thinks that such measures are unjust to the resources of the country and its taxpaying population.*

Prince Ito's "Commentary on the Constitution" specifies that *the cabinet is not to be responsible to any branch of the legislative body, but solely to the source of their power—the Emperor.* Thus, while personal dislike by the ruler or continued opposition by the Diet may result in the retirement of a minister or ministry, it is merely to bring into power a new section of the same bureaucracy. The elder statesmen, an unofficial body of men who played a part in the Government in the earlier stages of the post-restoration period, and the privy council, composed largely of the princes of the blood, prominent nobles, and the ablest of the ex-premiers and cabinet members, advise the Emperor on such matters as war or peace, and their advice is usually followed. *Thus we have a bureaucracy headed by the all-powerful Emperor, practically independent of the Diet and in complete control of the international policies of Japan and the means of carrying out these policies.*

In such a situation, of what value for the maintenance of peace is any possible love of peace among the common people of Japan, even though it may exist. *The Government is militaristic and aggressive.* It teaches the youth of the Empire from earliest childhood that their greatest privilege in life and their most positive assurance of a reward hereafter is to lay down their lives for their Emperor. *If the Government decides that war is advisable for its greater glory and profit, it can and will have war, regardless of the wishes of the populace.* That, and not the alleged peaceful disposition of the Japanese coolie, is the fact which America must bear constantly in mind.

SUMMARY OF INFORMATION BEARING ON JAPANESE PREPARATION FOR WAR.

Source: Reliable.

1 April to 30 June, 1921.

The following is a general survey of Japanese preparation for war, from a reliable source:

It is believed that it is not overstated to declare that no nation, during peace time, has prepared so strenuously for war as Japan is now doing.

As manifestations for such preparations, there may be cited the following:

(*a*) *Material.*—Almost all arms of the service have new drill regulations embodying to some extent at least the lessons of the European War. A new training regulation for all branches of the service has also just been published. While, from our standpoint, these new regulations do not appear to embrace all of the lessons that might have been learned from the war, still from a psychological stand-

point they are probably as great a change as could be made at one step.

Strenuous efforts are being made to equip the army with new arms as rapidly as facilities permit. The caliber of the rifle and machine gun has been made larger; models of new weapons used in the European War are now being studied and copies in all arsenals; a new 15-cm. field howitzer has been manufactured, and a battalion is now being assigned to each artillery regiment. 37-mm. guns, trench mortars, and light machine guns are being manufactured at the arsenals and will be used in the near future. Extensive experiments have been made in chemical-warfare service, and a new gas mask has been issued to the service. The results of experiments in the chemical-warfare service are kept very secret, but they can be expected to follow along German lines. All arsenals are now working at full capacity.

(*b*) The plans of the navy have been the subject of considerable discussion in the newspapers. It is sufficient to say that construction is being rushed on the new eight-eight fleet and that all shipyards, private as well as Government, are hurrying this plan to completion.

Mention has been made from time to time of the strenuous efforts made to improve the aerial forces of the army and navy, which have hitherto been quite backward. The navy will have a large British mission, not only to instruct them in flying but in the manufacture of motors and planes as well. A great advance in naval aviation may be expected as a result of this British mission. While it is true that the number of competent Japanese pilots is not yet inconsiderable, the possibility that competent foreign aviators might be obtained in case of war should not be lost sight of.

The most significant evidence of preparation for war, however, lies in the attempt to mobilize civilian industry. This is a comparatively new manifestation, but sufficient evidence has been obtained to show that very earnest efforts are being made along this line. Civilian firms are being encouraged to undertake the manufacture of munitions by preferential tariff, Government subsidies, Government guaranteed dividends, and, above all, by Government orders. The presence of a large number of German technical experts who are employed by these firms is well worthy of notice. Recently an order for 1,500 machine guns was placed with various iron firms in Osaka which, as far as is known, had not been engaged in munition manufacture before. This movement can be expected to increase and doubtlessly it has extended much more than is actually known.

The attempts of the Japanese to make themselves independent in the matter of raw materials are too well known to need more than a simple mention. As long as Japan has Chile to draw on she can be said to be practically self-supporting in raw materials.

(*c*) With regard to the inevitable question as to the object of Japan's preparation the fact, of course, is recognized that America is the " potential " enemy. With the removal of Russian and German power in the Far East there remains no logical enemy other than the United States. It is against the United States that the extensive plan of propaganda has been directed. Yet it would be going too far to say that Japan actually contemplates hostilities against the United States. It seems rather certain that she would not be so foolish as to attack the United States. Her only object in thus arming herself would seem to be to make herself so strong that no country would dare interfere with her or any of her plans or policies in the Far East. What their plans and policies are can not, of course, be stated with certainty, but it is certain that they include both Siberia and China. Reference has already been made to apparently authentic reports of a rapproachement between Japan and Chang Tso Lin, which look to the acquisition of the Chinese Eastern Railway by Japan. With reference to Siberia, attention must be called to the occupation of north Saghalien and the adjoining mainland. Distribution of troops and construction are now going on in that region which are strong indications of permanent occupation.

16 April.

The Army program will be completed by the end of 1923. Statements to the same effect received from many other sources. Included under this Army program are fortifications of all outlying islands.

An English officer stationed with Japanese troops in the country recently told a member of this office that the Japanese officers toasted the war with America just as the Germans toasted " der tag."

GENERAL INFORMATION.

21 June.

Japan has made material changes in her naval policy, and while adhering to the eight-eight program of battleships and battle cruisers, is paying far more attention to hydroplanes, submarines, destroyers, light cruisers, and mines. Four capital ships now are under construction, all that is possible in Japanese plants. Recently work was slowed down upon these crafts and additional forces assigned to the other types of warships, work upon which is being rushed with all possible speed.

The battleship *Nagato* is the newest of the fighting ships and is one of the eight-eight units. The tests in the inland sea were not deemed sufficient, so a cruise of three days and nights in the open Pacific was decided upon. The cost of this trial is reliably reported to have been $100,000, the object being to determine the maxi-

mum cruising capacity. It is said defects were found and therefore work on the other units was halted.

NAVY COUNCIL MEETS.

A long session of the naval councilors in Tokyo followed the trial cruise, and afterwards the admirals of the fleet, Admiral Kato, minister of the navy, and Prince Fushimi held sessions at the imperial palace. Following this came several important events relating to the smaller craft.

First, it was decided not to accept offers from British shipbuilding firms for the construction of some of the light cruisers which are to be a part of the eight-eight program. Instead these will be built in Japanese yards. The official reason announced is that the construction was possible in Japan for $100 a ton less than the figure quoted by the British.

A second important decision was to hold maneuvers in the inland sea despite the urgent cry for economy.

CHANGE IN COMMANDER.

A third important result was the appointment of Admiral Techanani, heretofore in command of the first squadron, as commander in chief. Vice Admiral Funakeshi was relieved of his post as commander of the training squadron and appointed a member of the supreme naval officers' council. Vice Admiral Saito succeeds him as commander of the training fleets. Vice Admiral Kawahara was appointed commander of the second fighting fleet.

But the chief result of the conference concerns a cruise by submarines to the islands of the South Seas which came under the control of Japan under the mandate of the league of nations, confirming the awards made in London at the time Japan entered the war. Ostensibly this cruise is a distance test of submarines, but it is believed to have also the object of determining submarine bases in the new possessions in the event the mandate question is reopened by the Yap controversy and the use of the new islands for military purposes is made possible.

VOYAGE OF 6,000 MILES.

Rear Admiral Junichi Matsumura is in command of this expedition, which includes as many naval officers as it is possible to accommodate. The cruise, which began early this month, will require two months or more, and contemplates a voyage of 6,000 miles, the longest single lap of which will be the 1,700-mile jump from Yap to the Marshall and Caroline Islands and return.

The submarines selected for the trip are *Nos. 25*, *26*, and *27* of the Third submarine flotilla and *Nos. 19*, *20*, and *23* of the Fourteenth flotilla, with the *Karasaki* of the First flotilla leading the undersea craft. Starting from Saganoseki, in Oita-ken, the submersibles first went to Keeling, in Formosa. Then they went to the submarine base at Takao, in Formosa, and the intention was to proceed next to Yap. Then it was proposed to visit the Caroline and Marshalls, and it was hoped to have the vessels back at Kogeshima on July 29 and at Kure on July 30.

NAVAL BUDGET.

12 February.

Parliamentary fight for immediate reduction of armaments was defeated 38 to 285. Instead of slowing down, Japan is not only rushing construction at maximum capacity but is expanding munition works and naval plants as rapidly as possible in order to increase production still further.

MEN OF WAR.

Following vessels have been completed since January 1st, 1921:
Light cruisers: *Kiso*, *Oi.*
Destroyers (first line): *Nadakaze*, *Akikaze.*
Destroyers (second line): *Fugi*, *Aoi*, *Kimu*, *Hagi.*
Submarines: *No. 23*, *No. 24*, *No. 25*, *No. 26*, *No. 31*, *No. 32*, *No. 33*, *No. 42*, *No. 43.*
Tank vessels: *Shiretako*, *Erimo.*
Following vessels have been authorized since January 1, 1921: Four light cruisers, first reported as 5,500, now believed to be of 7,000 tons. No details. One full ship at New York Shipbuilding Co., 20,000 tons.

25 May.

Several foreign experts who have recently visited private Japanese shipyards state that the construction of the *Kaga* and *Tosa* is neither rushed nor are these ships progressing as rapidly as should normally be expected. On the other hand, the construction of smaller ships, especially submarines, is being rushed. They stated that the activities of the Kawasaki yard in particular made one feel that the country is in the midst of war.

Another foreigner who recently (about May 1) visited Yokosuka stated that almost no progress had been made on the *Amagi*, only a small section of the vertical keel is in place. He is of the opinion that the final design of these battle cruisers has not yet been definitely decided upon, and that it is for this reason, and not because of lack of material, that they are being delayed.

26 May.

The Japanese are also sending a mission to Germany to negotiate for the building of a battleship in Germany. This mission leaves Japan June 3. The naval attaché in London, Capt. Kabiyashi, has written Capt. Yokura in New York to the effect that he has a great many orders for work which he believes could be transferred to the United States if it would help in strengthening friendly relations between Japan and America.

22 April.

Reasonably reliable information has been received by this office that a Japanese party (probably Japanese naval commission) left Japan the day after the naval estimates were presented to Parliament, indicating that the British Admiralty would lay down four capital ships of the improved *Hood* type. It is further understood that this commission is charged with following as closely as practicable the progress of construction of these vessels with the particular idea of obtaining such data as they are able to obtain relative to the improved features of design.

25 May.

In July, 1920, the Japanese consul at Batavia wrote to the Dutch Colonial Government that the two oil tankers *Susaki* and *Noma* (naval tankers) were engaged in transporting oil from Borneo directly to Japan, and that on account of weather conditions these vessels sometimes might be compelled to leave the direct route and to touch Monado occasionally. The Japanese consul informed the Colonial Government "in order to avoid any misunderstanding." As Menado is situated quite out of the route from Borneo to Japan and as Menado's roadstead is rather bad in case of stormy weather the Dutch navy commander at Batavia believes that the periodical visits of the said two Japanese steamers to the coast of Menado could have other purposes, viz, to make extensive surveys of the coast of north Celebes, which from a strategical point is favorably situated with regard to the Philippines.

Fortifications, etc.

22 April.

Besides increasing the fortifications on Bonin Islands, the navy has decided to erect a fortress on Akuni Island, near Loochoo Islands. A naval defense corps will be stationed on the island on the completion of the fortification work next year. (Source: Newspapers.)

5 April.

The reconstruction of the fortresses at Uraga, Kata, Yura, and Imahary is in progress in accordance with the fortress reconstruction scheme passed by the Diet in the last session. A new fortress will

also be constructed in the Loochoo Islands, and another in the Bonin Islands, thus completing the first defensive lines on the Pacific. The preliminary land survey has been completed and the work will be taken in hand early in April. (Source: Newspapers.)

Taihoku, Taiwan, Formosa.

9 May.

The transfer of Gen. Shiba, commanding the military forces in Formosa, to Tokyo as a military councilor and the appointment in his place of Lieut. Gen. Fukuda, hitherto assistant chief of staff in Tokyo is reported.

The appointment of Baron Den as the first nonmilitary governor general of Formosa was not looked upon with favor by the military powers, and to offset what they felt as a blow to their prestige, they appointed a full general as a commander of troops here, although but two brigades is the normal force. The appointment of a lieutenant general still gives them a man of higher rank than any civil official here save the governor general. The fact that Gens. Shiba and Fukuda are both officers with considerable staff experience would seem to indicate that the work here had more to do with the tactical preparation than with the mere command of troops. The British Government is about to sell the site of a former British consulate in Takao to the Japanese Government which, until it acquired the site, would be unable to proceed with the fortification of the harbor for the reason that the site commanded the whole terrain. An unusually high price is to be paid. The purchase will mean rapid completion of the fortification of the harbor of Takao.

The harbor of Keelung is considered fully fortified. Understand that the outer harbor has recently been somewhat deepened. The report in the press of hauls of fish near Keelung killed by dynamite blasting would seem to point to considerable work of that nature.

18 February.

The order for armor plate at Vickers is for 7,600 tons. The contract price is £240 sterling per ton. Japan is now manufacturing armor plate at Kure for £120 sterling per ton. The armor is 5, 7, and 11 inches thick and intended for *Amagi* and *Akagi*. When the vice minister of the navy signed the contract he announced the reason for purchasing abroad was that the quality of armor plate made in Japan was not uniform and dependable. Of course, this statement does not ring true. If the armor made in Japan is not dependable, then the Japanese would not augment their supply by purchases abroad but would stop all armor plate manufacture in Japan and order their total requirements from abroad. Therefore, from this order it would seem that one of two conclusions must be drawn. First, either Japan can not make sufficient armor to meet her require-

ments, or second, bribery and graft is going on again as shown by the 1911 " naval scandal." Either or both of these can reasonably be expected as responsible for the order. In connection with the " naval scandal " it is interesting to note that the Vickers representative now in Japan is the same man who at that time was implicated and forced to leave Japan over night, and that the Mitsui company, the other company implicated in the affair, is again doing considerable purchasing abroad for the Navy.

20 May.

The Japanese Government has ordered more material in the last 12 months from the Barr & Stroud factory than America has ever ordered to date. At the present writing their figures run into figures (£ sterling). In addition to the 9 naval range finders previously supplied, the Japanese Government has already been supplied with 5 of these, which makes a total of 14. The Japanese have stated to Barr & Stroud that these 14 range finders are to replace the Bausch & Lomb range finders ordered during the war which have proved satisfactory. We believe that these are simply 14 additional range finders. As an indication of their activities Barr & Stroud's representative states that in the event of war Japan is prepared to buy up everything they have in stock within an hour after the receipt of news of the declaration of war.

Submarines—Submarine Engines.

After the conference all three of the Japanese officers proceeded immediately to Germany for the evident purpose of either driving a better bargain with some of the German plants or of ordering further engines to be built at the same time, in which work was progressing on the engines in Winterthur.

There is being constructed for the Imperial Japanese Navy the following list of material in Winterthur alone:

2 sumbarine Diesel motors of 6,000 horsepower each.
1 subamrine Diesel motor of 5,000 horsepower.
2 submarine Diesel motors of 3,000 horsepower each.
10 submarine Diesel motors of 1,500 horsepower each.
1 engine of 600 horsepower (type not specified).
1 engine of 500 horsepower (type not specified).

In the last part of 1918 the Japanese bought the licenses to construct Diesel engines of the Sulzer type in their home shops, these engines to be of no greater horsepower than 1,500. This they are now doing, but the products of the Japanese shops are found to be greatly inferior to those turned out by European workmanship.

Another interesting point, mentioned casually, in connection with the Japanese officers stationed at Winterthur was that while some of the engines were being inspected by them, they accepted several parts

which were absolutely defective and which had been condemned by the company's inspectors, unbeknown to them. The parts under discussion were replaced, however, by the company, as they would not permit defective pieces of machinery to leave the works.

Sometime ago these officers came to the management and insisted that absolute secrecy be maintained regarding all orders and contracts. Mr. Robert Sulzer, who was at one time the ambassador to the United States from Switzerland, does not like to give the benefit of his shops too liberally to the Japanese, due to the fact that he personally has no friendship for them.

From a different source. **26 April.**

Three Japanese naval officers were attached to their works in the capacity of inspectors for the Japanese navy. The senior officer is of the rank of commander, the other two being lieutenants; one of them looks after shop inspection and the other office details. The Japanese Government has recently purchased two 3,000-horsepower Diesel engines for destroyers and ten 450-horsepower engines, the last of which had completed its test several days prior to my arrival. From the Sulzer Bulletin, dated March, 1921, headed "List of references of Motors Marine Diesel Sulzer," the number of Diesel engines that have been ordered by the Japanese Government since 1918, is as follows:

Type.	Number.	Horse-power.	Date.
045.....	4	5,200	1918
045.....	6	2,600	1919–1920
8054.....	2	6,000	1920
4032.....	2	900	1921

The Japanese have the plans for these engines and I believe they have in mind building Diesel engines of this type in their home yards, but the Sulzer people express doubts as to their abilities, particularly due to the necessity for excellent steel and the lack of expert knowledge in the building and fitting of these engines.

The Sulzer works have designed a Diesel engine of 4,500 horsepower, but these plans are not quite completed; however, the Japanese representatives at Sulzer's know of this and they have requested Mr. Sulzer to design a 5,000 horsepower Diesel engine for them.

15 June.

The following is of interest in connection with a remark which the Japanese inspectors at the Sulzer works made when they were discussing the amount of cooling water to be driven through the water passages in the cylinder walls. It seems they had decided upon

the power needed to drive the boats at a certain speed, and then decided on the size of the cylinders and the number of them so they would fit in the hull, and this determined the heat that was to be generated in the cylinders, and the question came along as to what temperature of cooling water they expected to use. The Japanese inspectors told them to prepare for cooling water about 90° F., and the engineer who was drawing up the plans, remarking that 90° was certainly a great deal warmer than any water around Japan, asked to be assured on the point of the temperature. The Japanese appeared to be embarrassed by the query, but finally explained that they might have to take their ships down to some of the new southern islands that had just come into their possession in the Pacific.

Gas Warfare.

18 February.

The Japanese Government recently purchased from Germany, at a very high price, their latest poison-gas formula, and there are now in Japan three German chemists who are instructing the Japanese chemists in the manufacture of this gas.

5 April.

The Japanese Government has perfected a light artillery shell containing poison gas superior to anything known. Japan has obtained the last German war-time secret which they had not yet had an opportunity of making practical when the armistice was concluded. However, it will be impossible for Japan to keep the secret long, despite Japan's intensive campaign against spies.

REORGANIZATION OF STANDING SQUADRONS—JAPANESE.

Source: Reliable.

(7525–B.)

July 1, 1921.

It has been definitely decided to reorganize the Japanese fleet about December 1, 1921. It is hoped by so doing to effect a certain amount of economy.

The proposed organization is as folows:

FIRST FLEET.

Battleship division: *Nagato* (flag), *Mutsu*, *Yamashiro*.
Battle-cruiser division: *Haruna* (flag), *Hiyei*, *Kongo*.
Cruiser division: *Kuma* (flag), *Tama*, *Kitagami*, *Kiso*.

Destroyer division: Two light cruisers (probably *Tenriu and Tatsuta*) as flotilla leaders, and four flotillas of four destroyers each; making a total of 2 light cruisers and 16 destroyers.

Submarine division: Number of submarine flotillas not known (probably four of three boats each).

Aviation division: One airplane carrier (*Wakamiya* until *Hosho* is commissioned.)

SECOND FLEET.

This fleet will be composed of old battleships (probably *Aki* and *Satsuma*), cruisers and destroyers, and will be assigned detached patrol duty on foreign stations.

Other ships, except gunboats on foreign station, and destroyers and submarines attached to various naval stations, will either be placed in reserve for repairs or out of commission. Included in this list will probably be the *Fuso*, *Kashima*, *Katori*, *Settsu*, *Kirishima*, *Kurama*, *Tokiwa*, and about 20 small craft.

COMMENTS ON ARTICLE "WHAT HAPPENED AT JUTLAND."

Source: Admirals Scheer and Von Hipper.

(7476.)

4 August, 1921.

To Commander GILL:

I have read with a great deal of interest your book, "What Happened at Jutland," which you kindly had sent to me through the publishing house of the Doran Co. Up to the present time, I know of no better or more comprehensive account of these events. Your analysis does, to a high degree, justice to the leadership on both sides.

It is to be regretted for the future direction of naval forces in war time—for I do not yet believe in lasting peace—that the battle did not develop into a thoroughgoing heavy-gun action between capital ships. Nevertheless, I am convinced that the battleships, in spite of having better armor protection than the battle cruisers, would have also suffered internal explosions like that in the *Invincible*, due to the effect of hits, and that, had there been another half hour of good visibility, certainly many other ships would, at least, have been forced to haul out their stations in the battle line.

Victory will go to the fleet which has the best gunnery. However much water-tight integrity may be developed, invulnerability is impossible. Torpedo craft, by means of their attacks, will be able to hamper accuracy of gun fire, by compelling the enemy to employ evading maneuvers; steering a steady straight course is essential to good marksmanship.

I could wish that the correct judgment which the American naval officers have evinced in reference to the conduct of the German fleet in action might be exercised by the political leaders in regard to all the conditions and relations leading to the world war and in regard to the manner in which the war was prosecuted by all the parties thereto, in order that there might be a really friendly and trustful feeling reestablished between such nations having no hostile interests.

SCHEER.

To Commander GILL:

For your kindness in sending me your work "What Happened at Jutland," I wish to express my most sincere thanks.

I have read the same with the greatest interest. Not only does it impress me as being very thorough, clear, and complete, but it is also evident that it was written with complete understanding and with the endeavor to do both sides justice to the utmost possible degree.

VON HIPPER, *Admiral.*

EXTRACTS FROM THE OFFICIAL REPORTS OF FLAG OFFICERS AND COMMANDING OFFICERS OF THE GRAND FLEET ON THE BATTLE OF JUTLAND.

Source: Lieut. Commander H. H. Frost, U. S. Navy.

In this, and subsequent issues of the BULLETIN, extracts from the British official reports will be published under the following parts:

PART IV. LIGHT CRUISERS.
PART V. DESTROYERS AND DESTROYER LEADERS.
PART VI. AIRCRAFT.

These extracts will be further divided under the following sections:

SECTION A. GUNNERY.
SECTION B. TORPEDO FIRE.
SECTION C. ENGINEERING.
SECTION D. COMMUNICATIONS.
SECTION E. MISCELLANEOUS.

PART IV. LIGHT CRUISERS. SECTION A. GUNNERY.

First Light Cruiser Squadron—Commodore E. S. Alexander Sinclair.

1. At 2.32 p. m. a three-funneled cruiser opened fire at 15,000 yards, salvos falling both sides of *Galatea* and *Phaeton*, but only one 5.9-inch shell hit *Galatea;* this did not burst.

Second Light Cruiser Squadron—Commodore W. E. Goodenough.

2. At 4.40 p. m. *Southampton* sighted and reported enemy's battle fleet bearing S. by E., steering N. The Second Light Cruiser

Squadron closed to within 13,000 yards to observe enemy's battle fleet, and came under very heavy fire.

3. At 5 p. m. the Second Light Cruiser Squadron turned northwards and followed our battle cruisers and Fifth Battle Squadron. The Second Light Cruiser Squadron were at this time practically in line with the rear ship of the Fifth Battle Squadron, and came under a heavy fire from time to time until about 6.05 p. m.; no damage, however, resulted.

4. At 6.47 p. m. the Second Light Cruiser Squadron turned in towards the German line partly to finish off a disabled battleship, but more to observe the enemy's rear more clearly, their course being in doubt. Enemy's turn to ESE. was reported by *Southampton* at 7.04 p. m.

5. The squadron now came under heavy fire from the German battle fleet, and it became necessary to return to the rear of our battle line.

6. Between 6.55 and 7.05 p. m. water and spray was constantly coming on board *Southampton* from enemy's salvos, which were dropping all around the ship.

7. At about 8.30 p. m. a German destroyer was sighted and fired on by *Southampton* and *Dublin*, who hit her heavily amidships. She was afterwards sunk by a division of our destroyers.

8. At 9 p. m. the enemy's destroyers attempted to attack our Fifth Battle Squadron from the northwest. They were driven off by the Second Light Cruiser Squadron; one destroyer was observed to have been hit.

9. At 10.20 p. m. the squadron was engaged with five enemy ships, apparently a cruiser and four light cruisers, who concentrated on *Southampton* and *Dublin* at very short range. The action was very sharp while it lasted (about 15 minutes), and the casualties in *Southampton* were heavy.

10. Three fires broke out on board *Southampton* during the action; these were promptly extinguished, though the hose had been very much cut up by shell fire.

"Birmingham"—Capt. A. Duff.

11. About 4.35 p. m., Greenwich mean time, on Wednesday, May 31, 1916, H. M. S. *Birmingham* was under heavy fire from 11 or 12 inch guns of the enemy's battle fleet, and on one or two other occasions later in the evening.

12. On all these occasions the shells were falling all around the ship, so close that a good many pieces of the shells as they burst came on board and also a good deal of water thrown up by them. The fact that the ship was not actually hit appeared extraordinary, and I attribute it in a great measure to the fact that on each occasion

when fire was opened the ship at once steered away at full speed, and, on each salvo falling near the ship, course was at once altered 2 points one way or another. As a result of this, although the next salvo appeared correct for range, it was generally well clear to the right or left. But there was also a large element of good fortune in it, as when there was more than one ship firing at us it was impossible to avoid them all and many fell all around the ship.

13. It was noticed that just before they ceased firing, on account of the ship getting out of range, the time of flight was 40 seconds, which appeared also to be the time between the salvos.

14. About 7 p. m., Greenwich mean time, on May 31, 1916, fire was opened on a disabled battleship or large cruiser with the remainder of the squadron, and the shooting appeared to be good, the bursts of the shell on her being quite obvious.

15. I was unable to fire on the destroyer that the rest of the squadron fired at later in the evening owing to being blanketed by some of our own destroyers.

16. During the attack on the enemy's cruisers about 10.15 p. m., Greenwich mean time, it was impossible, owing to the smoke made by the three ships that were ahead of me in the line, to see anything until the enemy's ships switched on their searchlights, when fire was opened on the rear ship. From the same cause it was then so difficult to see that I could not distinguish what class of ships they were. The enemy ship returned the fire and the shot fell very close around the ship.

"Dublin"—Capt. A. C. Scott.

17. 4.56 p. m. Second Light Cruiser Squadron under very heavy shell fire from enemy's battle fleet, salvos falling very close, but the ship did not receive a direct hit, although many pieces of 12-inch shell came inboard.

18. 4.58 p. m. A 12-inch shell struck the water a few yards on starboard beam and 4 shells passed just over the bridge.

19. 8.56 p. m. Observed two enemy torpedo-boat destroyers on starboard bow and "opened fire" on same, and they disappeared in a cloud of smoke.

20. 10.40 p. m. Sighted enemy's vessels on starboard beam, it being quite dark and rather misty. Directly enemy "switched on" searchlights, *Dublin* opened a very rapid fire on an enemy ship on the beam, but it was impossible to distinguish what ship it was.

21. 10.45 p. m. Lieut. Percy Strickland, navigating officer, was killed as he was stepping onto the upper bridge; ship was being hit many times, and on a fire starting on the seamen's mess deck the ship was hauled out 3 points, which made enemy's shells fall short.

22. 11 p. m. All firing ceased, and in total darkness hauled over 3 points to port, as *Southampton* appeared to be doing so.

23. During the night action the ship was struck by 13 shells, about half of which did not explode.

"Nottingham"—Capt. Charles B. Miller.

24. At 2.55 p. m. a signal was received from senior officer, Battle Cruiser Fleet, to Second Light Cruiser Squadron: "Prepare to attack the van of the enemy."

25. *Nottingham* was at that time on *Lion's* starboard bow and took up a position a shade on her port bow as far ahead as possible, in order to break up any attack from enemy torpedo craft, and to support our own torpedo-boat destroyers of Thirteenth Flotilla.

26. The enemy torpedo-boat destroyers started to attack about 4 p. m. and *Nottingham* opened fire upon them, which fire appeared to be effective, and the attack was not pressed home.

27. *Nottingham* sustained no damage and no direct hits from heavy shell, although she was frequently straddled and fragments of heavy shell bursting in the water close to the ship struck the sides and fell about the upper deck.

Third Light Cruiser Squadron—Rear Admiral T. D. W. Napier.

28. We then, in common with other ships, engaged a large 3-funneled light cruiser, I think *Elbing*, from 9,700 to 4,600 yards, and she was soon brought to a standstill. *Falmouth* fired a torpedo at her at about 5,000 yards, but the result is unknown.

29. Fire was then shifted to two other light cruisers who were firing at our destroyers, and after a short time they turned away and were lost to view.

30. Two enemy battle cruisers then appeared detached from the others, and steering about east, thought to be *Derfflinger* and one other (possibly *Lutzow*).

31. They were from 6,000 to 5,000 yards on our starboard beam, and were engaged by the Third Battle Cruiser Squadron, who joined from the north and turned to the eastward about 2,000 yards on our port beam.

32. No other target presenting itself, fire was directed at the leading battle cruiser, from 5,200 to 6,100 yards, and fire was returned by the battle cruisers with 6-inch.

33. *Falmouth* and *Yarmouth* both fired torpedoes at her, and it is believed that *Falmouth's* torpedo hit, as an underwater explosion was distinctly visible.

34. At 3.15 a. m. a Zeppelin was following the rear of our fleet, observing, and we drove it off with shrapnel fire, although unable to bring it down at the range, which was 14,000 yards.

35. Although the squadron was under fire during the afternoon and evening of May 31, no ships received any direct hits except *Falmouth*, whose foretop communications were out.

Ships were occasionally struck by shrapnel and small pieces of shell.

"Chester"—Capt. Rob. N. Lawson.

36. At 5.36 one 3-funneled light cruiser with one (or perhaps two—opinions differ) destroyers was sighted dimly a little on starboard bow. She was challenged and made no reply. *Chester* altered course to about west. The appearance of the destroyer made it most probable that the ship was an enemy. (The light cruiser had, I think, been firing at some ships to the westward of her, but her target was not in sight from *Chester*.) As the *Chester's* course laid her open to torpedo attack by the destroyer at once, course was altered to starboard from about west to about north (the approximate course of enemy), bringing enemy well abaft the port beam. The approximate position at this time was lat. 57.10 E., long. 5.42 E.

37. While turning, two more light cruisers were sighted astern of the other. The leading light cruiser opened fire on *Chester* at about the time of the completion of the turn to northward, and *Chester's* first salvo was fired at her at about the same time as her (the leading light cruiser's) second salvo. The range was about 6,000 yards. After *Chester's* third salvo, the fourth salvo (about) of the enemy disabled No. 1 gun, portside, and killed or wounded a large proportion of the guns' crews of Nos. 1, 2, and 3 port. The appearance of two more light cruisers made it desirable to increase the range rapidly. *Chester* turned to northeastward, her speed and rapid alteration of course making any effective firing from *Chester* impracticable. The after gun continued firing steadily in local control. By the time *Chester* had steadied on a northeasterly course all enemy ships had apparently opened fire and obtained an accurate range. In about the first 5 minutes of the action most of *Chester's* casualties occurred, and the three guns, No. 1 port and Nos. 1 and 2 starboard, were, I believe, disabled during the same period. There were several small cordite fires in the first few minutes; they were not serious except for damage to personnel. The personnel of all guns' crews was also seriously reduced.

38. From the time of altering course to the northeast my attention was given to dodging enemy's salvos by steering toward the last fall of shot, thus maintaining the mean course to the northeastward, and keeping enemy's salvos falling alternately on either side on account of the constantly changing deflections. This was apparently successful as regards saving the ship from a large amount of further serious damage. In the last few minutes I believe she was seldom

hit, but the changes of ship's course rendered it impossible for the after guns to make effective shooting, even if the guns' crews had been in a fit state and sufficient numbers to do so. But it was obvious to me that *Chester* was smothered with enemy's fire, and I considered only the best way of getting out of action, without further heavy loss, by zigzagging and taking shelter to the northeastward of the battle cruisers.

39. My opinion is that all enemy salvos were fired by director. Considering that there were three enemy ships, the rate of fire was perhaps not great. Spread for both elevation and direction was small. Range was thoroughly well maintained, but correction for deflection was evidently difficult. I do not estimate the rate of fire of any one ship higher than one salvo every 45 seconds, and if three ships were not firing all the time, it was slower than this. There were usually four or five shots per salvo.

40. The principal items of serious damage to material are:

1. Three guns disabled.
2. After control destroyed.
3. Whaler and one cutter smashed, and some other boats damaged.
4. Forecastle deck holed and splintered in many places.
5. Large amount of electrical circuits and voice pipes (including fire control) damaged.
6. All funnels holed, foremost funnel very badly.
7. Forebridge considerably damaged.
8. All rigging in a bad state.
9. Three holes in armor, and damage to frames behind these.
10. Two holes in side above armor.
11. E. R. ventilation trunks wrecked, and forecastle deck fittings generally much damaged.
12. Two boilers: Slight damage to tubes from splinters.
13. Number of small steam and water pipes holed and shot away.

"Canterbury"—Capt. Percy Royds.

41. At about 5.52 p. m., Third Battle Cruiser Squadron opened fire to port, and immediately after a 4-funneled cruiser of *Roon* class and a 3-funneled cruiser were sighted on our port bow ahead of the enemy's battle cruisers, distance about 12,000 yards, steering in southerly direction.

42. To follow Third Battle Cruiser Squadron it would mean running past the battle cruisers, and considering this inadvisable, I turned roughly 16 points to port and engaged enemy's light cruisers, who were then administering heavy punishment to two British destroyers. one of whom was on fire aft and the other standing by her;

our approach soon reduced the fire on them; we fired 40 rounds of 6-inch and 35 rounds of 4-inch at a range of 10,000 yards.

43. The 3-funneled cruiser was seen to be badly on fire aft. While this ship, although surrounded by falling shot, was only hit once, a 4.1-inch high-explosive armor-piercing shell hitting her in the ship's side just abaft after 6-inch gun, passing through two bulkheads, the main deck, and landing in the fresh-water tank, failing to explode.

44. During the action the firing of the German light cruisers was all by director, each salvo falling in a space of 30 yards, and being very rapid.

Fourth Light Cruiser Squadron—Commodore C. E. Le Mesurier.

45. 7.22. Ordered by commander in chief to attack enemy destroyers. Latter—a half flotilla—bearing NW. by N., steering toward head of *King George V.* division. Opened fire 8,000 to 9,000 yards, leading torpedo-boat destroyer disappeared, one other disabled.

46. 7.36. Enemy destroyers retired, Fourth Light Cruiser Squadron resumed station on *King George V.*

47. 8.5. *Castor* and torpedo-boat destroyers turned to west, a smoke screen observed WNW.—First division, *Calliope*, *Constance*, and *Comus*, turned to support Castor.

48. 8.18. Opened fire on enemy's destroyers, a half flotilla steering toward rear of Battle Cruiser Fleet in direction SSW.

49. Enemy destroyers made smoke cloud and retired on own line.

PART IV.—LIGHT CRUISERS. SECTION B. TORPEDO FIRE.

First Light Cruiser Squadron—Commodore E. S. Alexander Sinclair.

1. At 5.50 p. m. a signal was received from *Lion* for light cruisers to attack with torpedoes.

Second Light Cruiser Squadron—Commodore W. E. Goodenough.

2. One torpedo (high speed setting) was fired at close range by *Southampton* at 10.21 p. m. It is worth observing that when passing within about a mile of the spot, by reckoning, at 11.30 a. m. the next day, the sea was covered by oil, for an area of about a square mile.

"Dublin"—Capt. A. C. Scott.

3. At 4.12 p. m. ordered by Commodore of Second Light Cruiser Squadron to support our destroyers in a torpedo attack. *Dublin* at the time being about 5 cables on disengaged bow of *Lion* and, proceeding at "full speed," it was found impossible to cross the bows of the *Lion* to take up position, also our smoke would have much interfered with the *Lion* if I could have crossed her bows.

"Nottingham"—Capt. Charles B. Miller.

4. About 4.40 p. m. *Nottingham* fired an E. R. torpedo at enemy battle fleet, the range being about 16,500 yards, the battle fleet being in line ahead. No other opportunity for firing torpedoes presented itself.

Fourth Light Cruiser Squadron—Commodore C. E. Le Mesurier.

5. 7.25–7.35. At least six torpedoes observed in squadron to pass ahead or through the squadron's track.

6. 8.30. *Calliope* fired a torpedo at leading ship of *Kaiser* division at 6,500 yards. Light Cruisers retired on *King George V* divisions, heavily shelled by three enemy battleships.

7. 9.5–9.10. *Caroline* fired two torpedoes and *Royalist* fired one torpedo at enemy, mean range 8,000 yards. Enemy opened fire on *Caroline* and *Royalist*, also on *Comus*—rejoining *Caroline*. Latter and *Royalist* turned away.

PART IV. LIGHT CRUISERS. SECTION C. ENGINEERING.

"Birmingham"—Capt. A. Duff.

1. When under fire of the battle fleet the engines were put to full speed and subsequently kept at it for two hours in order to regain station. During this period the revolutions averaged 381, or 14 higher than the ship has done since she was in commission. The work of the engine-room department under Engineer Commander John B. Hewitt was most satisfactory throughout a very arduous day.

"Dublin"—Capt. A. C. Scott.

2. The wireless trunk having been shot away, it was some considerable time before the main aerials were connected up; in the meanwhile the battle aerial was connected up and signals were received.

"Nottingham"—Capt. Charles B. Miller.

3. The ship was steaming at high speed from 3 p. m. until 8 p. m., and from 4 p. m. to 6 p. m. the engines were running at a mean speed of 377 revolutions, the greatest S. H. P. developed being 28,156.

4. No defects were brought to light except an increased leakage of oil fuel from after tanks into reverse feed tanks in after engine room, caused probably by the vibration.

PART IV. LIGHT CRUISERS. SECTION D. COMMUNICATIONS.

"Chester"—Capt. Rob. N. Lawson.

1. A W/T from Commander in Chief to Third Battle Cruiser Squadron was intercepted at 4.15 p. m. order the squadron to re-

inforce Battle Cruiser Fleet. At about this time a large number of reports, some apparently contradictory, were being interpreted, relative to position, course, and speed of enemy sighted and engaged by various units of the fleet.

PART IV. LIGHT CRUISERS. SECTION E. MISCELLANEOUS.

First Light Cruiser Squadron—Commodore E. S. Alexander Sinclair.

1. At 2.18 p. m. on May 31 in latitude 56° 52′ N., longitude 5° 21′ E., *Galatea* and *Phaeton* being in the port wing position of the light cruiser screen, course and speed of Battle Cruiser Fleet being SE., 20 knots, attention was drawn by a steamer, bearing S. 72 E. about 12 miles, blowing off steam and the masts and two funnels of a war vessel were made out in her vicinity. This was reported by *Galatea*, who in company with *Phaeton* closed at high speed. It was then found that two German destroyers had stopped the steamer and that a squadron of cruisers and torpedo-boat destroyers were a little to the northeastward apparently steaming in various directions which made it difficult to send an adequate report.

"Inconstant"—Capt. B. S. Thesiger.

2. At about 8 p. m. the ship struck or was struck by something. *Cordelia* had since reported that she struck something at about the same time, so it is assumed we struck some submerged wreckage.

Second Light Cruiser Squadron—Commodore W. E. Goodenough.

3. On the enemy retiring, *Southampton*, *Nottingham*, and *Birmingham* proceeded and remained astern and on starboard quarter of the center of the battle fleet during the night, as it was not known what protection they had against destroyer attack. Firing astern was heard at intervals between 10.30 p. m. and 2 a. m.

H. M. S. *Dublin* became detached from the squadron during the night and did not rejoin till 10 a. m. the next day.

"Dublin"—Capt. A. C. Scott.

4. From 11 p. m. until 2 a. m. on June 1 observed continuous flashes of guns to the northward.

At daylight no vessel in sight but visibility low; I think the shell which passed through the chart house and then exploded must have affected the standard compass, otherwise the ship must have been in close touch with Second Light Cruiser Squadron.

Third Light Cruiser Squadron—Rear Admiral T. D. W. Napier.

5. At 4.32 p. m. we passed a quantity of what looked like large brass cartridge cases of 12 to 15 inches diameter, but have since been considered to have probably been smoke boxes, as the enemy had already been much obscured by whitish clouds of smoke.

"Active"—Capt. Percy Withers.

6. I have the honor to report that at about 11.15 p. m. on May 31 His Majesty's ship under my command was felt to strike something. No damage was apparent from the inside of the ship, and no leak developed.

On June 8 divers were sent down, and it was found that some 15 feet of the starboard bilge keel had been torn back and was projecting about 4 feet from the ship's side.

NOTES ON THE CONDUCT OF THE JUTLAND OPERATION.

By Lieutenant Commander H. H. Frost, U. S. Navy.

I. INTRODUCTION.

The conduct of a naval operation by an entire fleet is a tremendous problem, even if there is no actual contact with the enemy during its execution. The issue of instructions to and the handling of a great fleet and numerous coastal and base forces requires the utmost skill. In our Navy we have never had the opportunity of carrying out a naval operation on a large scale.

The publication by the British Admiralty of the official despatches of the battle of Jutland places at our disposal a great mass of information, from which may be deduced the methods used at that time by the royal navy in the conduct of operations.

It is our purpose to show how the Admiralty, the commander in chief of the Grand Fleet, and the senior officer of the Battle Cruiser Fleet conducted the various phases of the operation.

II. MEASURES TAKEN BY THE ADMIRALTY ON MAY 30.

On May 30, probably during the forenoon, although it is not so stated definitely, the British Admiralty received secret information, presumably through its agents in Germany, which indicated "early activity on the part of the German fleet." The fact that this information was received so quickly demonstrates the excellence of the British intelligence system; Admiral Scheer did not decide upon his memorable sortie into the Skagerrak until the 30th, and the High Sea Fleet did not actually sail until the morning of the 31st. The British agents in the German bases and in the High Sea Fleet itself must therefore have been exceedingly well placed.

As soon as the secret information was received by the Admiralty it was passed on by land wire to the commander in chief and the senior officer, Battle Cruiser Fleet. They were also informed that eight German submarines had recently sailed from their bases and were now operating in the North Sea.

At the same time the Admiralty took a number of minor precautions. At 11.58 a. m. the vice admiral, Dover, had been instructed to have the Harwich destroyers return to Harwich at once and to recall the Belgian coast patrol. The rear admiral, east coast, at Grimsby, was to recall the mine-sweeping sloops. The Third Cruiser Squadron was ordered to proceed that day from the Nore to Swin; the Third Battle Squadron, composed of battleships, second line, was to remain at the Nore; both squadrons were to have steam ready for short notice after daylight of the 31st. At 12.37 the Admiralty ordered the captain (S), Maidstone, to have all submarines ready for sea. At 2.37 the commodore (T), Harwich force, reported to the senior officer, Battle Cruiser Fleet, that five light cruisers and fifteen destroyers were ready for service.

At 5.40 the Admiralty sent the following message by land wire to the commander in chief, Grand Fleet, at Scapa: "You should concentrate at eastward of Long Forties for eventualities." The senior officer, Battle Cruiser Fleet, at Rosyth, and the senior officer, Second Battle Squadron, were included in the multiple address of this message.

Fifteen minutes later the Admiralty informed the commander in chief that until more was known the Third Cruiser Squadron, the Third Battle Squadron, and the Harwich force would not be sent to sea. At 6.20 p. m. the commodore (T), Harwich force, was instructed to be ready to sail at daylight. He replied that he had detailed eight more destroyers to screen the Third Battle Squadron and had five light cruisers, two flotilla leaders, and thirteen additional destroyers available.

Three Harwich submarines had previously been instructed to proceed early on the 31st to take up a position off the Vyl Lightship, near the Danish coast. The captain (S), Maidstone, who was at Harwich, was now instructed to send off these boats immediately; they were to remain on their patrol stations until June 3.

The Admiralty was evidently in doubt as to whether the Fifth Battle Squadron, which was then at Rosyth, had received instructions to raise steam; at 6.30 p. m. a despatch to this effect was sent direct to the battle squadron. The senior officer, Battle Cruiser Fleet, had already issued the necessary instructions at 5.45.

At 6.55 p. m. the rear admiral east coast, and the captain in charge, Lowestoft, were ordered to recall their auxiliary patrols, presumably to prevent their being attacked by enemy light cruisers. A few minutes later the same officers, together with the commodore (T), Harwich, and the commander in chief, Nore, were instructed to have aircraft "scout to seawards" at daylight of the 31st.

At 8.27 p. m. the commodore (T) reported that six submarines had sailed. Three of them were evidently the ones detailed to take sta-

tion off the Vyl Lightship. At 10.35 the Admiralty ordered the commodore (T) to send eight destroyers to join the Third Battle Squadron at Swin at daylight and to keep the remainder of his force ready on one hour's notice.

At 9 p. m. the commander in chief informed the Admiralty that the fleet would sail at 9.30 p. m. This shows that the time for initiating the operation amounted to about four hours.

During the evening the commander in chief, Rosyth, reported that the Battle Cruiser Fleet, the seaplane carrier *Engadine*, and destroyers had sailed at 10 p. m. and that the Fifth Battle Squadron had departed at 10.40 p. m.; the rear admiral, Invergordon, reported that the Second Battle Squadron, the First Cruiser Squadron, the light cruiser *Boadicea*, the flotilla leader *Kempenfelt*, and nine destroyers had sailed from Cromarty at 10.15.

At 11.20 the commander in chief reported that the Eleventh Submarine Division was ready and requested that the Admiralty give it orders as the situation developed. At 1.22 a. m. the commander in chief informed the Admiralty of the rendezvous for the Battle Fleet and Battle Cruiser Fleet at 2 p. m. that day.

III. ORDERS OF THE COMMANDER IN CHIEF FOR HIS DETACHED FORCES.

The various measures taken by the commander in chief during the evening of the 30th may be divided into two general classes:

(*a*) Orders for the forces not present with the flag, issued in his capacity of commander in chief of the Grand Fleet.

(*b*) Orders for the forces with the flag, issued in his capacity of senior officer of the Grand Fleet at Scapa.

The measures taken by the commander in chief for the purpose of initiating the entire operation consisted of orders sent by despatch to the senior officer, Battle Cruiser Fleet, at Rosyth, and to the senior officer, Second Battle Squadron, at Cromarty. These will be considered first.

As soon as the commander in chief received the instructions from the Admiralty to concentrate to the eastward of the Long Forties he ordered the senior officer, Battle Cruiser Fleet to raise steam. This message was received by Admiral Beatty at 5.49, or only nine minutes after Admiral Jellicoe received his instructions from the Admiralty.

At 7.27 the commander in chief asked the senior officer Second Battle Squadron at Cromarty when he would have steam for 19 knots. Three minutes later the commander in chief sent the following instructions for the operation to the Second Battle Squadron:

(*a*) The squadron to raise steam as soon as possible.

(*b*) To pass through a designated position, lat. 58–15 N., long. 2–00 E.

(*c*) To join the commander in chief at 2 p. m., the 31st, at a designated position, lat. 57–45 N., long. 4–15 E.

(*d*) The squadron was informed that several enemy submarines were known to be operating in the North Sea.

At 8.15 p. m. the commander in chief sent his instructions for the operation to the senior officer, Battle Cruiser Fleet; these contained the following provisions:

(*a*) The available vessels of the Battle Cruiser Fleet, the Fifth Battle Squadron, and the destroyers, including those of the Harwich force, were to proceed to a designated position, lat. 56–40 N., long. 5–00 E.

(*b*) It was assumed that the Battle Cruiser Fleet and accompanying vessels would reach this position at 2 p. m. of the 31st.

(*c*) At that time the commander in chief would be in a designated position, lat. 57–45 N., long. 4–15 E., unless delayed by fog.

(*d*) If no information of the enemy was received by 2 p. m. the commander in chief would steer for Horn Reef, and the senior officer, Battle Cruiser Fleet, was to stand toward him to get into visual contact.

(*e*) The Third Battle Cruiser Squadron and the light cruisers *Chester* and *Canterbury*, which were at Scapa, were to leave with the commander in chief, but would be sent on to the 2 p. m. position of the Battle Cruiser Fleet.

(*f*) The senior officer, Battle Cruiser Fleet, was to repeat back the designated positions.

At 8.39 the senior officer, Battle Cruiser Fleet, acknowledged the receipt of the instructions and repeated back the designated positions correctly.

IV. ORDERS OF THE COMMANDER IN CHIEF TO THE FORCES WITH THE FLAG.

On May 30 the Grand Fleet forces at Scapa were in what was known as "Organization No. 2." While in this organization a division of battleships consisted of eight ships, while a subdivision consisted of four ships. The forces at Scapa comprised the following:

Second Division (equivalent to the Fourth Battle Squadron).
- Third subdivision.—*Iron Duke*, *Royal Oak*, *Superb*, *Canada* (*Royal Oak* assigned by signal).
- Fourth subdivision.—*Benbow*, *Bellerophon*, *Temeraire*, *Vanguard*.

Third Division (equivalent to the First Battle Squadron).
- Fifth subdivision.—*Marlborough*, *Revenge*, *Hercules*, *Agincourt*.
- Sixth subdivision.—*Colossus*, *Collingwood*, *Neptune*, *St. Vincent*.

Attached light cruisers.—*Blanche*, *Bellona*, *Active*.
Attached light minelayer.—*Abdiel*.
Attached destroyer.—*Oak*.
Third Battle Cruiser Squadron.—*Invincible*, *Inflexible*, *Indomitable*.
Attached light cruisers.—*Chester*, *Canterbury*.
Second Cruiser Squadron (formed by signal from the Second and Seventh Cruiser Squadrons).—*Minotaur*, *Hampshire*, *Cochrane*, *Shannon*.
Fourth Light Cruiser Squadron.—*Calliope*, *Constance*, *Comus*, *Caroline*, *Royalist*.
Flagship of the commodore of the flotillas (Commodore F.)—*Castor*.
Twelfth flotilla (captain D 12).—2 leaders, 14 destroyers.
Eleventh flotilla (captain D 11).—5 destroyers.
Fourth flotilla (captain D 4).—2 leaders, 17 destroyers.

At 5.40, the very instant the despatch from the Admiralty was received, the commander in chief hoisted a general flag signal: "Preparatory signal for leaving Scapa, negative *Royal Sovereign* and *Menelaus*." Three minutes later semaphore signals were sent for the *Royal Oak* to return to the fleet anchorage and for the Fourth Battle Squadron to cease experiments for the present. At 5.54 the *Marksman*, a leader of the twelfth flotilla, was ordered by radio to return to the anchorage with the destroyers in company with her. At 6 the *Constance* and *Caroline* were ordered to take position on "Y line" by sunset, which was about 9 p. m.

At 6.04 the commodore (F) ordered the captain (D 12) to recall the patrols, which at that time were probably the *Mischief*, *Narwhal*, and *Mary Rose*. Three minutes later the commander in chief ordered the commodore (F) to detail four destroyers to the Second Cruiser Squadron. At 6.11 the senior officer, Mine sweepers, was ordered to keep the sloops out, as the fleet might leave port.

At 6.25 the commander in chief ordered the Third Battle Cruiser Squadron, the four destroyers for its screen, and the *Chester* and *Canterbury* to raise steam for 22 knots.

In addition to the battleships which were already units of the fleet, the *Royal Oak* and *Royal Sovereign* were in Scapa. These vessels had just been completed and placed in commission. The *Royal Oak* was assigned to position No. 10 in the organization, but the *Royal Sovereign* was omitted from the operation altogether. There were in port four cruisers of the Second and Seventh Cruiser Squadrons, and these were combined for the duration of the operation into the Second Cruiser Squadron, under the command of Rear Admiral Heath in the *Minotaur*.

At 7 the cruisers and destroyers were ordered to raise steam for 20 knots; the commodore (F) ordered all destroyers, except the *Nymphe*, to raise steam for 22 knots. At 7.05 the two battle squadrons were ordered by flag signal to raise steam for 19 knots. The First and Fourth Battle Squadrons both reported they would be ready to proceed at 9.45 p. m.

At 7.50 the commodore (F) was ordered to have the destroyers for the battle cruisers, the cruisers and the First Battle Squadron meet the squadrons to which they had been detailed off Swona. Those for the Fourth Battle Squadron were ordered to join off the Hoxa obstruction. The *Chester* and *Canterbury* were placed under the orders of the Third Battle Cruiser Squadron.

At 8.07 the commander in chief made a general flag signal for the fleet to leave by the "D. T. 3 method" at 9.30. The rear admiral, *Cyclops* was instructed to have the gate opened by that time and informed that Light Groups I, II, and III would be used after 10.30 p. m.

At 8.15 a general semaphore signal was sent out, containing the following instructions for leaving port:

(*a*) The "D. T. 3 method" to be used, ships in close order.

(*b*) The Fourth Light Cruiser Squadron to go west of Swona and south of the Skerries.

(*c*) The other squadrons to go east of Swona and north of the Skerries.

(*d*) The First and Fourth Battle Squadrons, and the Second Cruiser Squadron to take route A, passing through a designated position, lat. 58–47 N., long. 2–37 W.

(*e*) The Fourth Light Cruiser Squadron to take route B, passing through lat. 58–45 N., long. 2–37 W.

(*f*) After passing through these designated positions all squadrons were to steer 87°.

(*g*) At 1.30 a. m. the battle squadrons to change course to 90°, cruisers conforming.

(*h*) At daylight the cruisers were to take scouting formation "L. S. 1–10."

At 8.40 the commander in chief informed the third subdivision that he would lead it out.

At 8.50 the senior officer Third Battle Cruiser Squadron signaled to weigh. The commodore (F) requested the R. A. *Cyclops* to have the main Switha gate open at 9.45. The commander in chief informed the senior officer mine sweepers that the fleet would leave between 9.30 and 10.30 p. m., and instructed him to have all mine sweepers keep clear.

At 8.53 the commander in chief received a report that the drifter *Duke of Clarance* had sighted a submarine on the surface off Pent-

land Skerries, which were immediately off the entrance to Scapa. This submarine was either the *U–43 or U–44*, both of which were stationed in this patrol area.

The commander in chief instructed all ships to take "W/T organization S" at 9.30. The following ships were assigned to guard wave lengths:

*Revenge*_____ Q *Superb*_____ W *St. Vincent*_____German interception.
*Benbow*_____ $ *Hercules*_____ X

At 8.56 the commander in chief for the third time sent out a general signal to the fleet to leave at 9.30 by the D. T. 3 method, adding that the speed would be 17 knots after leaving the obstruction.

At 9 the Third Battle Cruiser Squadron, *Chester and Canterbury* formed column and went ahead 12 knots toward the entrance. By 9.38 the four destroyers assigned to this squadron had taken position for screening in accordance with "Diagram No. 5."

The units of the fleet then got under way in succession and proceeded out of the port. The following table of times indicates the course of the operation:

Character of signal.	Second Cruiser Squadron.	Fourth Light Cruiser Squadron.	Fifth subdivision.	Sixth subdivision.	Third subdivision.	Fourth subdivision.
Shorten in to three shackles	.....	.....	.....	.....	9.30	9.30
Weigh	9.10	9.30	.....	.....	9.57	9.50
Point ship	9.15	9.34	.....	10.00	9.57	10.00
Proceed 12 knots	9.30	9.38	9.55	10.07	10.20	.....
Proceed 14 knots	.....	9.55	.....	.....	.....	.....
Proceed 17 knots	10.12	10.07	10.31	10.45	.....	.....
Proceed 18 knots	.....	19.32	.....	.....	.....	.....

The various attached vessels proceeded with the following units: the *Oak* with the third destroyer division of the Fourth Flotilla; the *Abdiel* with the Fourth Light Cruiser Squadron; the *Blanche* and *Campania* with the third subdivision; the *Bellona* with the fifth subdivision; and the *Active* with the fifth subdivision.

At 9.30 p. m. the senior officer, Third Battle Cruiser Squadron, having worked his squadron up to 19 knots, issued the following order by semaphore:

(*a*) The Third Battle Cruiser Squadron to be 10 miles ahead of the cruiser line, i. e., the scouting line to be formed by the First and Second Cruiser Squadron.

(*b*) Chester to be 5 miles astern of Third Battle Cruiser Squadron and in visual touch with the cruisers at daylight.

(*c*) Canterbury to be 5 miles ahead of the *Invincible* (flag Third Battle Cruiser Squadron) and in visual touch with her at daylight.

(*d*) Modified route B to be used. Speed of advance 17 knots. Zigzag to be used "during early hours."

At 9.50 the mine sweepers reported the visibility to be 3 miles. Daylight continued until 10, as flag signals were used up to this time.

At 10 the commander in chief ordered all ships in company to cease W/T communication except on sighting the enemy or in replying to him.

At 10.11 the commodore (F) ordered all destroyers to slip their moorings; they stood out in formation and joined the squadrons as ordered. At 10.18 the steering gear of the *Caroline* broke down and she temporarily fell out of her position in the Fourth Light Cruiser Squadron.

At 1.15 a. m. the commander in chief ordered the battle fleet to form line of divisions at dawn; divisions were to be at intervals of 1,600 yards; organization No. 5 was to be assumed. In this organization divisions consisted of four ships and subdivisions of two ships.

V. ORDERS OF THE SENIOR OFFICER, SECOND BATTLE SQUADRON, TO THE FORCES AT CROMARTY.

At 5.40 p. m., immediately upon the receipt of instructions from the Admiralty, the senior officer, Second Battle Squadron, hoisted the "Preparatory signal for leaving Cromarty."

The following Grand Fleet forces, in organization No. 5, were with the flag:

Second Battle Cruiser Squadron:
First Division—*King George V*, *Ajax*, *Centurion*, *Erin*.
Second Division—*Orion*, *Monarch*, *Conqueror*, *Thunderer*.
Attached cruiser—*Boadicea*.
First Cruiser Squadron—*Defense*, *Warrior*, *Duke of Edinburgh*, *Black Prince*.
Eleventh flotilla—*Kempenfelt* and nine destroyers.

At 6.05 the senior officer, Second Battle Squadron, hoisted a general flag signal to raise steam for 18 knots. This was followed by a signal to assume "W/T organization J" at 8.40 p. m. At 6.58 the *Erin* requested a collier to take 100 tons of coal. The collier was ordered by the squadron commander. At 7.07 the senior officer, First Cruiser Squadron, reported he would be ready to proceed at 18 knots by 10 p. m.

About 7.45 the signal to raise steam for 19 knots "with all despatch" was made, in accordance with an inquiry from the commander in chief as to how soon that speed could be made. At the same time the instructions from the commander in chief for the operation were received; these required the forces at Cromarty to leave at once and to meet the commander in chief at 2 p. m. of the 31st.

At 7.50 a signal was sent to unmoor, to weigh the western anchor, and to shorten in to 3 shackles. At 8.27 a general signal was hoisted to proceed out of the harbor at 9.45 in the D. T. 3 method at 18 knots. At the same time the rear admiral, *Invergordon*, was requested to have the gate open by 9.15. A request was also made to have Covesea Light shown from 10.30 to 11.30 p. m., and Kinnaird Light from 1 to 1.45 a. m. The captain (D), *Kempenfelt*, was instructed to have both battleship divisions screened by destroyers. The interval between divisions was to be 4 miles. At 8.45 the destroyers slipped their moorings.

The senior officer First Cruiser Squadron at 8.55 sent out a semaphore signal, as follows:

(*a*) Cruisers to be under way and headed to the eastward by 9.45 p. m.

(*b*) The *Defense* (flag) to go ahead at 12 knots at that time without signal.

(*c*) Column to be formed in close order.

(*d*) Speed to be made 14 knots at the outer obstruction, by signal.

(*e*) Increase to 18 knots by signal just before reaching the Whistling Buoy.

Beginning at about 9.30 the units of the Grand Fleet at Cromarty got under way and stood out to sea. The following table of times indicates the manner in which this operation was executed:

Character of signal or operation.	First Cruiser Squadron.	Second division.	First division.
Weigh	.....	9.30	9.40
Form column, speed 12 knots	9.45	9.47	.....
Speed 14 knots	9.55	10.00	9.58
Speed 18 knots	10.02	10.25	10.30
Change course to east by north	10.09	10.22	10.38

At 10.21 the senior officer ordered all units to have steam for 20 knots by 2 a. m. of the 31st.

VI. THE SAILING OF THE BATTLE CRUISER FLEET.

At 5.45 p. m. of the 30th, five minutes after the Admiralty had sent the despatch ordering the Grand Fleet to get under way, the senior officer, Battle Cruiser Fleet, ordered the units of the Grand Fleet at Rosyth to raise steam for 22 knots. The following forces of the fleet were present:

Flagship of the Battle Cruiser Fleet—*Lion.*

First Battle Cruiser Squadron—*Princess Royal*, *Queen Mary*, *Tiger.*

Second Battle Cruiser Squadron—*New Zealand*, *Indefatigable.*

First Light Cruiser Squadron—*Galatea*, *Phaeton*, *Inconstant*, *Cordelia.*

Second Light Cruiser Squadron—*Southampton*, *Birmingham*, *Nottingham*, *Dublin*.
Third Light Cruiser Squadron—*Falmouth*, *Yarmouth*, *Birkenhead*, *Gloucester*.
Fifth Battle Squadron—*Barham*, *Valiant*, *Warspite*, *Malaya*.
First flotilla—*Fearless* and nine destroyers.
Thirteenth flotilla—*Champion* and ten destroyers.
Harwich destroyers—Eight destroyers.
Seaplane carrier—*Engadine*.

At 6.07 the senior officer, Battle Cruiser Fleet, inquired by general signal when each squadron would be ready to get under way. The answers varied between 8 and 9.45 p. m.

The senior officer, Third Light Cruiser Squadron, assigned *Falmouth* and *Yarmouth* to position "C" and *Birkenhead* and *Gloucester* to position "D" in light cruiser diagram No. 1.

At 6.38 the senior officer, Battle Cruiser Fleet, ordered the gunboats to raise steam. At 7.25 the light cruiser *Nottingham* and the destroyers *Nomad* and *Nicator* sailed for dark night patrol off the port. The *Nottingham* was instructed to have the destroyers economize fuel. The gunboats, having requested instructions, were ordered to sweep "Y Channel" from the Isle of May.

At 8 p. m. the signal was hoisted for the battleships and battle cruisers to unmoor, to weigh the western anchor, and to heave in to 3 shackles. At 8.15 the orders for the operation were received from the commander in chief. At 8.20 the battle cruisers and battleships were ordered to have steam for 15 knots on one-half hour's notice and for 22 knots on one hour's notice. The light cruisers and destroyers were to have steam for 15 knots immediately and for 22 knots on one-half hour's notice.

At 8.25 the senior officer, Battle Cruiser Fleet, issued his instructions for leaving port. They contained the following provisions:

(*a*) The *Fearless* and first flotilla to precede the Fifth Battle Squadron out of port and screen them.

(*b*) The *Champion* and thirteenth flotilla to screen the *Lion* and First Battle Cruiser Squadron. Two of the ninth flotilla of Harwich destroyers were to join the thirteenth flotilla (these were the *Turbulent* and *Termagant*).

(*c*) The remaining six destroyers of the Harwich force to screen the Second Battle Cruiser Squadron.

At 8.50 the general searchlight signal was made for the squadrons to proceed out of the harbor at 9.30 p. m. Five minutes later the senior officer, Third Light Cruiser Squadron, informed his ships that he would leave at 9.20. The *Engadine* was ordered to take station astern of his squadron. The senior officer, First Light Cruiser

Squadron, was ordered to be under way and pointed at 9.15 and to have steam for 22 knots. The senior officer, Battle Cruiser Fleet, ordered the fleet to take radio guard as follows:

*Lion*_____S. D. X. *Princess Royal*_____X. *Queen Mary*_____W.
*Tiger*_____Q. *Indefatigable*_____U.

The following table of times shows the procedure of the fleet in leaving Rosyth:

Character of signal.	First Light Cruiser Squadron.	Second Light Cruiser Squadron.	Third Light Cruiser Squadron.	Second Battle Cruiser Squadron.	First Battle Cruiser Squadron.	Fifth Battle Squadron.
Weigh	9.15	9.10	.....	9.35	9.50	10.07
Point ship	9.15	9.15	9.20	9.43	9.54	.....
Form column	.....	9.25	.....	9.50	10.03	10.10
Speed 11 knots	.....	.....	9.40	.....	.....	.....
Speed 12 knots	.....	9.25	.....	9.50	10.03	10.10
Speed 15 knots	.....	.....	.....	10.11	10.30	.....
Speed 17 knots	.....	.....	9.55	.....	.....	.....
Speed 18 knots	1.10 a. m.	1.15 a. m.	10.09	10.20	10.40	10.42

While the fleet was leaving port the following instructions were issued by the senior officer, Battle Cruiser Fleet.

(*a*) The forces were to pass to the northward of May Island and then steer 66°.

(*b*) Speed from the outer gate was to be 18 knots.

(*c*) The Second Battle Cruiser Squadron was to precede the *Lion* by 5 miles distance.

(*d*) The Fifth Battle Squadron was to follow the *Lion* at a distance of 5 miles.

(*e*) All "W/T guards" were to cease radio communication after passing May Island, except on sighting the enemy or when replying to the admiral.

(*f*) The light cruisers were to form "L. S. 6." after passing May Island.

(g) The *Lion* was to steer 66° from May Island for 20 miles and then head toward position lat. 56–40 N., long. 5–00 E.

The use of flag signals commenced at 2.30 a. m., thus establishing the time of daylight. At 3.10 a. m. the *Nottingham*, *Nomad*, and *Nicator*, which had been out on dark-night patrol, rejoined the flag. At 3.55 the *Galatea* reported being fired at by a submarine.

VII. THE DEPLOYMENT OF THE BATTLE CRUISER FLEET.

At 2 p. m. of the 31st the First Battle Cruiser Squadron was steering course 87° (true) and making 19½ knots. At 2.10 the *Galatea*, the flagship of the First Light Cruiser Squadron, on the extreme easterly flank of the cruiser line, reported by searchlight that it was proceeding toward a steamer which had been stopped by a 2-fun-

eled ship; the steamer bore 98° and was estimated to be distant 8 miles.

The Battle Cruiser Fleet turned to course 357° at about 2.17 to join the Battle Fleet, which was about 70 miles to the northward and westward.

At 2.20 the *Galatea* hoisted a general flag signal, "Enemy in sight," and reported by radio that two enemy cruisers were in sight, bearing 98°. The seaplane carrier *Engadine* sighted the same vessels, but made no report. The *Galatea* apparently withdrew before the enemy vessels, as is shown by the positions she reported. At 2.30 the *Galatea* reported that the enemy cruisers had stopped. The other vessels of the First Light Cruiser Squadron concentrated on the *Galatea.* The *Falmouth* ordered the *Engadine* to close the battle cruisers and then proceeded to close the *Galatea.* The other vessels of the Third Light Cruiser Squadron concentrated on the *Falmouth.*

The senior officer, Battle Cruiser Fleet, at 2.32 hoisted a general flag signal to change course to 144° and made the speed 22 knots. Orders were issued to raise steam for full speed. At 2.34 the *Galatea* reported that the two enemy vessels were destroyers instead of cruisers; she turned to chase them, and at the same time sighted an enemy cruiser. At 2.37 the senior officer, Third Light Cruiser Squadron, reported sighting the two German vessels first sighted by the *Galatea.* At 2.39 the *Galatea* reported sighting a "large amount of smoke as though from a fleet," bearing 54°.

At 2.46 the senior officer, Battle Cruiser Fleet, ordered the captain (D 13), *Champion*, to send two destroyers to the *Engadine;* one minute later he ordered the *Engadine* to send up seaplanes to scout toward 8° (true). At 2.51 the *Galatea* reported that the enemy force consisted of 7 vessels, in addition to cruisers and destroyers. The *Galatea* now turned to the northwest and retired before the enemy light cruisers, receiving one 6-inch hit at a range of 15,000 yards.

At 3 the senior officer, Battle Cruiser Fleet, ordered the Second Light Cruiser Squadron "to prepare to attack the van of the enemy." The senior officer, Fifth Battle Squadron, ordered his squadron to take distance 700 yards between ships. At 3.05 the senior officer, Third Light Cruiser Squadron, reported that three enemy cruisers were in sight, bearing about 76°.

In the meantime, the senior officer, Battle Cruiser Fleet, having determined that the enemy bore well to the northward of east, had been hauling around gradually to the northeast. Thus at 2.52 the *Lion* and First Battle Cruiser Squadron had changed course to 121°; at 3.01 to 76°; and finally at 3.12 to 31°; at the same time he increased speed to 23 knots. The Second Battle Cruiser Squadron and Fifth

Battle Squadron followed the motions of the *Lion* and retained their approximate relative positions.

At 3.07 the *Engadine's* seaplane was hoisted out and immediately left the water. It sent in the following signals to the *Engadine:*

1530—Three enemy cruisers and five destroyers, distance from me 10 miles bearing 90°, steering course to the northwest.
1533—Enemy's course is south.
1545—Three enemy cruisers and two destroyers steering south.
1548—Four enemy cruisers and ten destroyers steering south.

The *Engadine* received the first three messages, but was unable to transmit them to any other ship. Airplane scouting was thus of no practical value in this action.

At 3:15 the senior officer, Second Battle Cruiser Squadron, sighted the five German battle cruisers on the starboard bow. At 3.20 the speed was made 24 knots. At 3.24 the *Nottingham* of the Second Light Cruiser Squadron, sighted five columns of smoke and one minute later the *Lion* made out the German battle cruisers. The *Galatea* also sighted the smoke of the battle cruisers astern of the German light cruisers which were chasing her. At 3.27 the senior officer, Battle Cruiser Fleet, hoisted the general flag signal: "Assume complete readiness for action in every respect." Three minutes later he changed course to 76° and increased the speed to 25 knots. At 3.30 the Second Battle Cruiser Squadron, according to the sketch of the *New Zealand*, were within 13,000 yards of the German battle cruisers. There was considerable danger that these two ships might be concentrated on by the five German ships: at 3.34 the senior officer, Battle Cruiser Fleet, ordered the Second Battle Cruiser Squadron to take station astern of the First Battle Cruiser Squadron. There was much signaling by the senior officer, Battle Cruiser Fleet, at this time, messages being repeated several times in a number of cases; this was one of the reasons why the *Engadine* was unable to transmit the information obtained by the seaplane. As an example, the Thirteenth flotilla was ordered to take station ahead and eight minutes later to gain a position two points forward of the starboard beam. The Ninth flotilla was ordered to take station ahead.

At about 3.34 the German light cruisers countermarched, and the First and Third Light Cruiser Squadrons turned and followed them to the southeast. The German battle cruisers countermarched at the same time.

At about 3.45 the Second Battle Cruiser Squadron gained their station in the battle cruiser column. At this time the senior officer, Battle Cruiser Fleet, ordered a course 98° and a line of bearing of 30° (true). The next minute the *Lion* and *Princess Royal* were ordered to concentrate on the leading German ship. At 3.47 the signal was made to "open fire and engage the enemy."

Vice Admiral Beatty apparently had brought an overwhelmingly superior force into contact with Vice Admiral Hipper; their total forces are shown by the following table:

	Beatty.	Hipper.
Battleships	4	0
Battle cruisers	6	5
Light cruisers	14	5
Destroyers	27	33

The Germans had, however, a considerable advantage due to the very scattered British forces; thus the eight light cruisers of the First and Third Light Cruiser Squadron, were entirely useless during the entire battle cruiser action. The *Fearless* and nine dsetroyers of the First flotilla were likewise wasted; the Fifth Battle Squadron was distant about 22,000 yards from the German battle cruisers and did nothing for the first 20 minutes of the action but fire at light cruisers without making a hit. Of the destroyers with the battle cruisers, but 12 were immediately available for an attack. Thus, of the entire British force there was immediately available only six battle cruisers, which were changing formation, twelve destroyers, which were not far enough ahead to be able to make an attack, and four light cruisers of the Second Light Cruiser Squadron, which do not seem to have been well formed, for they did nothing in the early part of the action. The *Champion*, flagship of the Thirteenth flotilla, was in position to lead a destroyer attack.

On the German side all five battle cruisers were in a steady formation, the *Regensburg* and 20 destroyers were immediately available, but not in a good attacking position, while the four light cruisers of scouting division II were unfavorably situated astern of the battle cruisers; however, they were of some use in keeping the Fifth Battle Squadron amused for a time.

Thus, neither side had its forces well concentrated when fire was opened; the British forces, in particular, were widely scattered. Those British forces which were immediately available, were not well formed in units or were in an unsteady formation; the battle cruisers certainly could not have reached their assigned positions in the line of bearing formation within two minutes after the signal for it was made.

VIII. MEASURES TAKEN BY THE ADMIRALTY DURING THE 31ST OF MAY.

The Admiralty at 8.05 a. m., instructed the R. A., east coast and the captain in charge, Lowestoft, that auxiliary patrols might proceed within 30 miles of the coast.

At 8.45 a. m. the commander in chief, Nore, reported that aircraft from Felixstowe, Isle of Grain, and Westgate had returned from scouting and had sighted nothing. An hour later, the captain (S), *Maidstone*, reported to the Admiralty that four submarines were returning from their patrol off Terschelling (on the Dutch coast). At 10.12 the senior naval officer, Harwich, reported in detail the reconnaissance flights made from Felixstowe and stated that no enemy activity had been detected. This information did much to prove that no German operation toward the Channel was in progress.

Shortly afterward the Admiralty ordered the captain (S), *Titania*, at Blyth to send one destroyer and four submarines to a designated position, lat. 54–30 N., long. 4–00 E., to await instructions by radio. At 2.35 p. m. the Admiralty passed this information to the commander in chief and stated that the *Talisman* had been detailed as the destroyer; this force had sailed at noon.

At 2.20 p. m. the *Galatea* reported the first German vessels; at 2.28 the *St. Vincent* reported intercepting a German coded message. The British direction finders picked up this and subsequent messages. The Li*on* received a message from the Admiralty at 3.29 p. m., stating that at 2.31 the directionals placed a German light cruiser in lat. 56–57 N., long. 6–9 E., and a destroyer in lat. 56–57 N., long. 5–43 E. While there is no way of checking up these positions accurately, it was at least approximately correct and should have been very valuable. The fact that this information was obtained and transmitted to the commander in contact with the enemy in less than one hour demonstrates the remarkable efficiency of the British communication service.

At 4.45 p. m. the commodore (T), Harwich, asked the Admiralty: "Have you any instructions?" At 5.15 he reported: "Urgent. I am proceeding to sea." At the same minute the Admiralty had ordered him: "Complete with fuel. You may have to relieve light cruisers and destroyers in Battle Cruiser Fleet later." At 5.35 the Admiralty ordered: "Return at once and await orders." In obedience to this despatch the force turned back, arriving at Harwich at 6.30 p. m.

The commander in chief informed the Admiralty at 4.51 that a fleet action was imminent. At 5 the Admiralty furnished the information that the German battle fleet was steering northwest at 15 knots and gave its position at 4.09. The British had evidently broken the German cipher, and from this time on continually intercepted the German radio messages, deciphered them, and sent them on to the fleet. This was especially fine work by the British communication service.

The senior officer, Third Battle Squadron, reported sailing for Black Deep Light Vessel at 5. At about 5.30 the Admiralty in-

structed the commander in chief, Nore, the commander in chief, Rosyth, the commodore, Harwich, and the vice admiral, Dover, to have tugs in readiness to assist injured ships. Twenty minutes later the Admiralty sent the following instructions to the senior naval officer, Invergordon, the commander in chief, Rosyth, and the admiral superintendent, Tyne: "Fleet action imminent. All docks should be ready in case they are required for vessels of the fleet." No dispositions were taken by the Admiralty nor any despatches sent to the commander in chief during the actual course of the action. This was an entirely correct procedure.

At 9.55 the Admiralty informed the commander in chief that three destroyer flotillas had been ordered to attack him. This information was correct. A few minutes later the Admiralty reported the 9 p. m. position of the rear ship of the German battle fleet and stated that she was proceeding on a southerly course.

At 10.30 the Third Battle Squadron and the Third Cruiser Squadron anchored at Black Deep.

The Admiralty informed the commander in chief at 10.41 that the enemy was believed to be returning to his base, as the course was SSE. ¾ E., speed 16 knots.

IX. MEASURES TAKEN BY THE ADMIRALTY ON THE MORNING OF 1 JUNE.

During the night the Admiralty continued to give the fleet the most valuable information concerning the German forces. At 1.48 the commander in chief was informed that at midnight a damaged German ship, probably the *Litzow*, was in lat. 56–26 N., long. 5–41 E., and that German submarines were apparently coming out of port. The position given was very accurate, as may be demonstrated by an examination of the German charts.

At 3.12 the Admiralty informed the commander in chief that a German light cruiser was still afloat at 3 a. m., in position lat. 55–45 N., long. 6–25 E., and that the crew had been taken off by destroyers, which were still waiting alongside. The German vessel was the *Elbing*, and the German charts show this position to be correct. At 3.29 the Admiralty reported the position, course, and speed of the "German main fleet."

At 5.30 a. m. the Admiralty reported that the *Ebling* was still afloat at 3.47 and without a crew; a correct position was also furnished.

This accomplishment of the British communication service was a most remarkable one. The positions of the German vessels were very accurately fixed by radio compasses on shore and the German code broken, so that all of their code messages could be deciphered. This information should have been of great value to the British forces,

but no attempt seems to have been made to get into contact with the German ships until too late.

At 2.07 the Admiralty ordered the destroyer *Talisman* to send two submarines on into Lister Deep, off Sylt, for the purpose of attacking German vessels which were damaged. These submarines did not arrive in time. The three British submarines which were stationed off Vyl Light Vessel, although in a perfect position to attack, did not accomplish anything. This is a powerful example of the limitation of submarines.

The Admiralty at 2.52 instructed the commodore (T), Harwich force, to proceed with the Fifth Light Cruiser Squadron, the ninth and tenth flotillas, to lat. 55–45 N., long. 6–00 E., to report to the commander in chief for relieving light cruisers and destroyers which were short of fuel. The commander in chief was informed of these instructions.

At 3.25 the commodore (T) received his orders and immediately hoisted the signal for steam for full speed. Twenty-five minutes later he made the signal to slip. The Harwich force then proceeded at gradually increasing speeds to the designated position. At 6 the commodore (T) requested instructions from the commander in chief; in reply he was ordered to send four destroyers to escort the *Marlborough.*

At 4.15 the Admiralty ordered the R. A. east coast to send two destroyers to escort the *Marlborough*, which was proceeding home in a very dangerous condition.

X. INFORMATION OF THE GERMAN FORCES RECEIVED BY THE BRITISH BATTLE FLEET DURING THE NIGHT OF 31 MAY–1 JUNE.

In addition to the valuable information sent out by the Admiralty, the British battleships received a great amount of information concerning the High Seas Fleet, and even observed a number of engagements which took place during the night.

The *Southampton* and the senior officer, Battle Cruiser Fleet, both made definite reports of the position of the German fleet at 9 p. m. A few minutes later the *Benbow* beat off a destroyer attack with her 6-inch battery and "B" turret. At 9.14 she sighted a star shell on her starboard bow. This must have been fired by a German ship, as the British had no star shells at this time. At 9.05 the senior officer, First Battle Squadron, reported an attack by German destroyers on British light cruisers close aboard.

The senior officer, Battle Cruiser Fleet, reported the enemy position and course at 9.38. This was received in the *Iron Duke* 3 minutes later. At 9.58 the *Garland* reported to captain (D 4) that German destroyers were steaming southeast. Two minutes later the *Contest* made a similar report.

At 10.12 the *Benbow* observed firing on the starboard beam. This was the engagement between the Second Light Cruiser Squadron and the German scouting division II. At about 10.30 the *Contest* and *Garland* reported having fired at enemy destroyers to captain (D 4) and commodore (F), respectively.

At 10.40 the *Boadicea* reported to the *Thunderer* that enemy ships were on the starboard beam. Five minutes later the *Benbow* observed heavy firing on the starboard quarter. At 10.50 the commodore (F) reported by radio that he had been engaged by enemy cruisers.

At 11.30 the minotaur observed gunfire on the port quarter; this was the torpedo attack of the fourth flotilla. At the same time the *Birmingham* reported battle cruisers, probably hostile, in sight, bearing northeast and steering on course south. These probably were the *Seydlitz* and *Moltke*, which were preceding the High Sea Fleet. Four minutes later the *Benbow* observed firing astern and on the port quarter. At the same time the *Valiant* observed a heavy engagement a little over 2 miles astern of her. Star shells were seen.

At 11.40 the *Malaya* made the following distinct report:

Three points abaft starboard beam observed what appeared to be an attack by our destroyers on some *enemy big ships steering the same way as ours, two of which used searchlights.* One of our destroyers (appearance of *Termagant* class) was set on fire, but not before she had hit the second ship. This was seen by the column of smoke, and also the explosion was distinctly heard and felt. The leading ship of the enemy, which was seen by the flash of the explosion, had two masts, two funnels, and a conspicuous crane (apparently *Westfalen* class).

Practically every battleship observed this action and Admiral Jellicoe states:

Firing was heard astern, searchlights were seen in use, and a fair number of *star shells were fired by the enemy, which gave out a brilliant illumination and it was evident that our destroyer flotillas and light cruiser squadrons were in action.*

At 11.38 p. m. the senior officer, Second Light Cruiser Squadron, was able to get through to the *Iron Duke* a radio report of his engagement at 10.15 with German cruisers which bore WSW.

The *Ambuscade* at 11.47 reported by radio to captain (D 4) having fired two torpedoes; this message was repeated by the *Indomitable* to the senior officer, Battle Cruiser Fleet.

The *Superb* observed fire astern from 12.05 a. m. to 12.15; at 12.30 firing and a large flare was seen astern.

The *Revenge*, which followed the *Marlborough* in the First Battle Squadron, makes the following very interesting statement:

About 12.30, what was first taken for destroyers approaching was observed and 6-inch guns turned on them and the order had been given to open fire,

when it was seen that the object was a large ship. She was challenged and made reply "PL" and rapidly disappeared astern. She had the appearance of a battle cruiser and resembled our own.

The following statement of Admiral Hipper is interesting in this connection:

The *Moltke* and *Seydlitz* had, during the night, gone to the head of the main body in order to support the II Scouting Group. The *Moltke* sighted a heavy enemy squadron twice during the night (probably the III Battle Squadron—the number is incorrect—which had remained behind with the *Marlborough*) and was for a time forced southward, but at daylight she succeeded in rejoining the main body of the German forces.

It is very probable, therefore, that the *Revenge* actually sighted the *Moltke*.

At 1.56 the captain (D 12) reported the position of the German battleships by radio. The message was never received. A great point has been made of the failure of Admiral Jellicoe to receive this message. A few minutes later the captain (D 12) reported by radio that he was attacking and that the enemy's course was SSW. Neither of these signals were received. At 2.15 the *Malaya* sighted some firing "a long way astern." This was evidently the attack of the twelfth flotilla.

REVIEW OF THE BOOK, "SEA POWER IN THE PACIFIC" (HECTOR BYWATER, AUTHOR).

Source: Reviewed by Lieut. Commander J. M. Creighton, U. S. Navy.

This, the most important recent estimate of the situation in world politics which concern the Pacific, an excellently detailed account of the naval power and the capacity for carrying on war of Japan and the United States, has just come from the press of the Constable Co., in London. The author is a very prominent writer on naval and international subjects in England, an associate of the Institute of Naval Architects, and will need no introduction to those familiar with his frequent articles in The Naval and Military Record and The Engineer.

In the first chapter the author goes into a comparison of the British and American Navies as they will exist in 1924, or when our building program is completed. He compares the *Royal Sovereign*, as the best type of British ship in their possession at present, with our new *Indiana*, and with the following results: *Royal Sovereign* displaces 25,750 tons, being thus somewhat smaller than our *Nevada* class. She has a speed of 22 to 23 knots and carriers eight 15-inch guns, fourteen 6's, and four torpedo tubes. Her thickest armor is over the waterline and the main gun positions and is 13 inches maximum. Her full

broadside amounts to 15,360 pounds. Our new *Indiana* is to displace 43,200 tons; her designed speed is 23 knots. She is to carry twelve 16-inch and sixteen 6-inch guns and will have two torpedo tubes. Her maximum armor will be 16 inches and her broadside weight 25,200 pounds. From any viewpoint the supremacy of the *Indiana* is overwhelming.

The *Hood* is also compared to our *Lexington* class of battle cruiser, to her disparagement. The British ship displaces 41,200 tons with a speed of 31 knots and an armor of eight 15-inch and twelve 5.5-inch guns. Her broadside weight is 15,360 pounds. The *Lexington* is to displace 43,500 tons with the designed speed of 33 knots and an armament of eight 16-inch and sixteen 6-inch guns, with a broadside weight of 16,800 pounds. Mr. Bywater calls further attention to the fact that the disparagement is more than appears from the figures, due to the superiority in effect of the 16-inch, 50-caliber gun over the 15-inch British gun of 42 or 45 calibers.

The relative condition of the navies of Great Britain and the United States in 1924 (providing the former does not construct any more battleships, but will turn out four battle cruisers of the *Hood* design, and providing also that the United States completes her 1916 building program), is detailed at length, but, with an apology to the author, I will regroup the ships here in the characteristics which the United States Navy has designated for vessels of the first class. In 1924 this condition will be as follows:

	Great Britain.	United States.	Japan.
Battleships, first line	[1] 23	[2] 21	[2] 12
Battle cruisers, first line	[1] 10	[2] 6	[2] 12
Light cruisers, first line	45	10	19

[1] 13.5-inch guns or better. [2] 14-inch guns or better.

Growth of the Japanese Navy.

The increase of naval expenditure in Japan since the Russo-Japanese War is shown to have been very rapid. The appropriations for 1906 were three times the amount they were in 1905 and thereafter the curve of expenditure mounted steadily. "Due to the peculiar budget methods practiced in Japan it is extremely difficult to total the various appropriations for naval service," but in 1918 the total was estimated at $125,000,000, a 30 per cent increase over the previous year.

In 1920 a sum of $250,000,000 was asked for the Navy. In the discussion in the Diet in July, 1920, concerning the new program, the minister of marine informed the members that the building list for which he was preparing involved 4 battleships, 4 battle cruisers,

and 12 cruisers and smaller craft, for which the cost would be $340,000,000, which, however, he explained was to be spread over several years. At any rate, no other nation is spending any such proportion of her income upon national defense as are the Japanese. They are aiming at the creation of what they have long called their "8:8:8 fleet," and that means 8 battleships and 8 battle cruisers of the largest and strongest type, none of which is more than 8 years old, and it is apparent that this will be a most homogeneous and powerful force of vessels, able to overmatch another force superior to it in numbers but inferior in the fact that its units are less uniform in power, design, and age.

Before the American Pacific fleet was created the Japanese were in undisputed superiority in the Pacific. Following the Anglo-Japanese agreement, the British withdrew their heavy fleet from Chinese waters and took it to the North Sea, where it was needed to protect them against the Germans. Recently a very modern and effective British fleet has made its appearance in Chinese waters, headed by the *Hawkins*, a large, fast, armored cruiser, completed in 1919, and carrying seven 7-inch guns. She leads a force composed of 4 light cruisers, each of 5,000 tons displacement, and a submarine flotilla of 12 British *L* boats. All of these vessels are of the latest and most effective classes. There is, in addition, a force of 5 new mine-sweeping sloops and the usual equipment of gunboats in the Chinese rivers. The Americans are represented in the East by a squadron distinctly inferior to those of the Japanese and the British, and Mr. Bywater assumes that the first step in any trouble between the Japanese and the Americans will be the complete destruction of our vessels in the East, who have neither the armament to stand and fight nor the speed with which to run away.

The Growth of Ill Feeling in the Pacific.

In chapter 2 there is taken up in detail the whole matter of the friction between the Japanese and the people of the United States. Previous to the Spanish-American War the relations between Japan and America were of the warmest, but with our acquisition of the Philippines and Guam and Hawaii, there arose a distinct antagonism from the Island Empire. Various subsequent questions, mainly those dealing with China and immigration, have combined to bring the ill feeling to a pitch which we recognize to-day. It was reported in Washington in 1899 that the Japanese Government had notified our authorities that they were unable to acquiesce in the sudden expanse of American influence across the Pacific, but if that was so, the fact was already accomplished and nothing more came of it. The same idea of territorial propinquity which may have brought out the Jap-

anese protest concerning the Philippines could hardly be expected to operate in the case of Hawaii, which is 4,400 miles away from Japan, and her protest over America's occupation of that group of islands led many observers to conjecture that she planned for herself the supreme dominion of the Pacific and viewed with alarm the passing of any of them into the possession of another country.

The immigration question in California is treated in full, but this matter has been so thoroughly done for the American public that it is not thought necessary to review the affair here, except to point out that one of the main objections to the presence of the Japanese is the fact that their low-wage standard deprives American workmen of employment and that the Government will have the distinct backing of the American labor forces in any opposition they may raise to continued Japanese immigration or to the maintenance of the Japanese workmen which are at present in this country.

Probably less well known to the American public, however, are the discriminatory actions which the Japanese practice against foreigners in their own country, the same ones in a great many cases which they object to having operated in the case of their own nationals abroad. Japan, for example, does not allow foreigners, as individuals, to acquire landed property in the islands; they can not become owners of ships flying the Japanese flag, and such interest as they may attain in ship concerns is subordinate by law to Japanese control. Foreigners can not hold stock in national, agricultural, or industrial banks, nor engage in mining operations, nor become members, shareholders, nor brokers of the exchanges, nor members of the chambers of commerce. They may not hold public office of any kind and they may not become members of the Japanese bar. Foreigners may not enjoy the franchise in Japan; they are not permitted to engage in agriculture; foreign physicians and surgeons can not practice in the country unless they have passed an examination in the Japanese language, both written and oral, before a board composed of native doctors. Under Japanese laws rebates may be granted by Japanese steamship companies on all goods belonging to Japanese merchants, by means of which they are enabled to undersell foreign competition, and Mr. Bywater states that it is recorded that the cases of litigation between foreigners and natives heard before Japanese courts have always shown an overwhelming proportion of judgments in favor of the Japanese. Regarding the questions of immigration, the Japanese maintain against the Koreans and Chinese precisely the same wall which the Californians wish to erect against them, and for exactly the same reasons. Chinese laborers are debarred from Japan on the grounds that they have a lower standard of living and that their participation in labor with the Japanese

workmen will introduce unfair competition, and Korean workmen are permitted in Japan only under conditions which will protect the Japanese workman.

The Open Door.

The growth of this policy is very distinctly traced. In 1900 Russia took advantage of the Boxer Insurrection to move her troops into Manchuria and upon the termination of that trouble she neglected to leave. From that time on the Japanese prepared to bring the matter to the decisive point, which they foresaw would have to be met, and this eventuated in the war of 1904 and 1905, from which they emerged a brilliant victor. The items of the peace treaty pledged both parties to leave Manchuria, except in the case of the Liao-Tung Peninsula, where Japan succeeded to the rights which were formerly in the possession of Russia. Otherwise, the administration of Manchuria was to go back into Chinese hands. It appears, however, that Manchuria simply changed one owner for another, for in succeeding years the Japanese secured from the weak Chinese Government concession after concession, allowing them to extend their railways throughout Manchuria, with the result that the whole district came under their control. Foreign trade was admitted only upon conditions which would not combat Japanese wares, and this Japan was able to do because she controlled the sole means for distribution in the Province. With an eye to preventing possible competition Japan concluded with China an agreement whereby the latter renounced the right to build any railway in the regions traversed by the South Manchurian line (Japanese) or of granting concessions to anyone else to build other railways in the district served by the Japanese lines.

The author states that no positive action was taken in the matter of the gradual spread of Japanese supervision until 1908, when the American Government proposed "to guarantee to China the integrity of her Manchurian Province by neutralizing the South Manchurian Railway." It was proposed to lend China $100,000,000 with which to repurchase the railway. This money was to be raised by a loan, jointly subscribed to by various powers and not by the United States alone. The Japanese objected to this suggestion with such warmth that an alternative scheme was suggested, providing for the construction of a line to parallel the South Manchurian Railway and to destroy its monopoly in transportation. Mr. Bywater remarks that the only reason that an international crisis did not develop at this time was that the English bankers, who were to participate with the American bankers in backing the loan to China, withdrew from the agreement.

The Twenty-One Demands.

In 1915, when the world was concerned with the Great War, Japan suddenly presented to China her famous 21 demands relating to Shantung, the Yangtse Valley, Fuhkien Province (on the mainland opposite Formosa), South Manchuria, and Eastern Inner Mongolia. Some of the 21 demands were communicated to the other nations of the world, but the most serious of them were concealed, and China was warned not to make them public. They did become public, however, and were of a nature so broad and imbued with such an assumption of supervision on the part of the Japanese that they were received everywhere with distinct opposition, and the great powers moved to secure their withdrawal. The secret articles of the Chinese note were as follows:

(1) The Chinese Government shall employ influential Japanese advisers in political, financial, and military affairs.

(2) Japanese hospitals, churches, and schools in the interior of China shall be granted the right of owning land.

(3) Inasmuch as the Japanese Government and the Chinese Government have had many cases of dispute between Japanese and Chinese police, the settlement of which caused no little misunderstanding, it is for this reason necessary that the police departments of important places in China shall be jointly administered by Japanese and Chinese, or that the police departments of such places shall employ numerous Japanese, so that they may at the same time help to make plans for the improvement of the Chinese police service.

(4) China shall purchase from Japan a fixed amount of munitions of war (say 50 per cent or more) of what is needed by the Chinese Government, or there shall be established in China a Sino-Japanese jointly operated arsenal. Japanese technical experts are to be employed and Japanese material is to be purchased.

(5) China agrees to grant Japan the right of constructing a railway connecting Wuchang with Kiukiang and Nanchang, another line between Nanchang and Hanchow, and a third between Nanchang and Chaochou.

(6) If China needs foreign capital to work mines, build railways, and construct harbor works (including dockyards) in the Province of Fuhkien, Japan shall be first consulted.

(7) China agrees that Japanese subjects shall have the right of missionary propaganda in China.

In 1918 Japan induced China to enter into an agreement for common military and naval defense. It provided for their military cooperation, standardization of their war plans—their transport, communications, and military codes. It was written in the proposal that the agreements and the stipulations contained in it should not be published either in Japan or China, but should be treated as a naval secret. This agreement was to terminate upon the conclusion of peace between the Allies and Germany, but in the autumn of 1920 the Peking Government is reported to have requested the Japanese to remove the troops in China which they had installed there under the pretext of the articles of the agreement. The author draws the con-

clusion that the actions of Japan in China during the last 20 years leads to but one interpretation and that is that she is determined to secure all of the great native wealth of that Empire to herself and to prevent the competition of any other nation if this can possibly be accomplished.

The efforts of the Chinese Consortium—a group of British, French, and American bankers—to induce the Japanese bankers to participate in the loan to China under a policy of mutual rights as distinct from that of individual monopolies were met originally by great opposition on the part of the Japanese, who claimed that it was their right to develop the railways in Manchuria alone and to refuse interest to any other power concerning their supervision. However, the efforts to come to a mutual understanding among the bankers are said to have met with distinct success, and the British and American members have come home to compliment the Japanese upon their willingness to agree with them. Mr. Bywater has his own opinion concerning this, however, and expresses it as follows:

> Exactly how far this scheme of joint financial control over the economic development of China will extend is not yet clear; but that Japan seriously intends to concede the principle of the equality of international interests in that country is difficult to believe in view of her past record. Such a concession would be absolutely opposed to the policy she has consistently followed since 1905, and it is possible that international finance takes too sanguine a view of the future.

The Power Behind the Throne.

In describing the background against which the foreign policy of Japan is based, the author calls attention to the composition of the Japanese electorate and of the Government. Japan has the outward appearance of a constitutional State whose institutions are modeled upon those with which we are familiar. As a matter of fact, it is remarked that the people have no real voice in other than purely domestic affairs and that in the Diet, which consist of an upper and lower house, there is very little actual executive authority, and like the old German Reichstag, it comes closer to being a debating society than the principal feature of the executive branch. In the last 40 years the Diet has been dissolved by the Emperor eight times for resisting and disagreeing with the Government program. The real power is said to center in the Genro, or Elder Statesmen, whose number is given as five. It is generally assumed that all the outstanding features of Japanese policy are developed by this small body of powerful men, and they are credited with the Japanese seizure of the Korean court and government in Seoul in 1894, of which action the Chinese War was the direct result.

The strength of the Japanese in the past has been that one which has stabilized all the old empires, and that is ignorance; the fact that the people were so poorly educated and so narrow in their experience

with other nations that there was no considerable opposition to the theory that the Emperor or King was divinely appointed and that the highest type of performance as a citizen was to blindly follow his wishes. As in every country in the world, the growth of popular education has brought on disturbances which have as their result the increasing independence of the private citizen and, since only a certain amount of authority can rest anywhere, the result has been a reduction of power in the hands of those who formerly held it all, and that is the nobility. There has been severe agitation for the extension of the franchise in Japan for the last 20 years and demands for a more powerful voice in the determination of Government affairs have increased remarkably since the World War, so much so, that a series of ruinous strikes have occurred in the country in the last two years, and recent newspaper dispatches from Japan tell of several of the large shipyards being in the hands of the workmen, with rampant indications of a socialism verging strongly upon the Russian sort.

The Cure for Local Discontent.

In 1894 Japan was in the midst of great unrest, due to the increase of local taxation, and the China War, occurring either by fortune or by design at that time, brought all parties in the country to an enthusiastic concord. Just preceding the Russian War a similar condition existed in Japan, and Mr. Bywater calls attention to the fact that discontent and the demands of the common people have never been so strong and insistent as they are at present; that a diversion of the people's minds from their local trouble has been persistently accomplished in the past by getting them excited over some question outside the country and that this maneuver is taking form at the present time in violent newspaper attention to every event which may be interpreted as an unfriendly American action toward the Japanese. He leaves the conclusions to the reader.

Building Expense, Dockyards, Etc.

It is interesting in the discussion of the expense of construction to see that Americans have been generally mistaken in the widely held impression that our vessels cost us more than those built abroad. He finds that we have uniformly built ships similar to the British vessels at a cost slightly less than theirs. The *Utah* of 21,825 tons, and costing £1,701,100 is compared with the *Colossus*, of 20,000 tons, built the following year at a cost of £1,730,000. So the battleship *Texas*, of 27,000 tons, cost less than the *King George V*, which is 4,000 tons lighter. The *Pennsylvania*, 4,000 tons heavier than the *Queen Elizabeth*, cost about £100,000 more than the British ship, but the *Pennsylvania* was built two years after the *Queen Elizabeth*.

The author goes thoroughly into the question of dockyards for the cleaning and repairing of large men-of-war, and in this he finds us

particularly crippled for operations in the Pacific. Lord Jellicoe called attention to the fact, in a speech after the war, that a graving dock is not a very spectacular affair; that no smoke comes out of the stack, and no bow wave goes up from the front, but that one of them is distinctly more important to a fleet than any floating unit could ever be and lasted longer and cost less to make. It is quite natural, however, and it is the case, that this very lack of being spectacular has prevented the popular mind from being easily attracted toward it, whereas it is not so much of an effort to canvas votes for a battle cruiser of some fast destroyers.

Concerning the Pacific docks, the title of the "Premier Yard" is given to Mare Island. Attention is called to the fact that the dredgers must be kept continually at work to make it available for the new ships. The developments at Bremerton are spoken of, and there is mention also of the plans for a first-class fleet base in San Francisco Bay, and the destroyer, submarine, and aircraft stations at San Diego, San Pedro, at Tongue Point (on the Columbia River), and at Ediz Hook (State of Washington), but the whole Pacific dock equipment is said to be distinctly unable to respond to the demands which active service would put upon it. Going to the insular possessions in the Pacific, the question of dry docks is shown to be even less well provided for. In the whole of the Pacific, as distinguished from the mainland of America, there is but one dock capable of taking a dreadnaught, and that is at Pearl Harbor. That is 1,000 feet long and has a width of 138 feet at the entrance. The only other docks which exist are at Cavite and Olongapo, and these would be of no use to a modern heavy ship.

Hawaii is called the "Key to the Eastern Pacific," and with this, and a base in the Alutian Islands and one in the canal, the strategy of that portion of the ocean is assumed to be well taken care of. This is particularly so as the distance from Japan to the American coast renders an active attempt to make a frontal attack with troops beyond the bounds of probability, and it is assumed that even light raiding forces would not be exempted from constant danger in the eastern Pacific, excepting, of course, in a case of long-range, modern submarines.

The board of inspection which visited Pearl Harbor in 1919 reported that the docking, repairing, and magazine accommodations would be entirely insufficient for the needs of the Pacific fleet in time of peace and even more insufficient if the whole American fleet were gathered here for an offensive purpose. The proposals for improvement included building two concrete piers, 1,800 and 1,000 feet long, respectively; a large foundry, machine and boiler shops, magazines; an oil-fuel depot; and a harbor railway; the building of another dry dock similar to the present one; the development of

complete submarine and aviation bases, and the dredging of a sufficient area in the present anchorage to allow for the comfortable berthing of eight dreadnaughts. It was also advised that the Government cooperate with the civilian authorities of Honolulu to develop the merchant harbor there in order that it might be utilized in time of war. In reviewing the extensiveness of these improvements, Mr. Bywater remarks that *they are matters of really primary importance, that they are much more in demand than a new battleship would be, that they would add more tactical efficiency to the fleet than a whole division of battleships, and that all the alterations together would cost less than one such vessel.*

Guam.

The real burden of the author's review of all the elements in the situation is that Guam is the most important of our possessions in the Pacific, with the possible exception of Hawaii, and that even if Hawaii were secure beyond any threat its possession alone would in no way insure our ability to maintain our position in the Philippines or in any of the waters within several thousand miles of Japan. It is apparent that since Honolulu is 4,400 miles from the Japanese coast our fleet could in no case be expected to emerge from its harbor and conduct blockading operations near Japan, nor could the fleet be expected to leave Honolulu and, upon arrival near the Japanese coast, find their opponent willing to emerge during the short period which our fleet could maintain itself there, and join battle, when mere waiting would force the invaders back to their bases.

Various objections are advanced to building up Manila to be our real point of strength in Asiatic waters. For one thing, it is among islands which furnish a great number of available points of invasion and the most practical means of absolutely preventing a successful attack—that is, the maintenance of our full fleet in Manila—would be not only translated as a distinctly unfriendly move but would be a matter requiring the greatest expense in the transportation of supplies and the upkeep of the ships. On the other hand, Mr. Bywater points out Guam may be prepared for a fleet base with relatively small expense. A combination of dredging, with outlying breakwaters, will provide anchorage in any magnitude desired. This island, of course, is barely self-supporting in even the essentials of food, and oil and coal storage, docking and repair facilities would have to be constructed. However, the defense would in no way be as difficult to maintain as that of Manila. It could be made absolutely sure by local employment of heavy coast defense guns, mine fields, and a strong force of submarines and aircraft so that it would not require the steady presence of the fleet there, but could be securely protected to furnish an arriving point for the main body of our

forces in their progress toward the Asiatic coast. Once the fleet were in Guam, it is pointed out that this is even a better "point d'appui" than anything in the Philippines and that the tenure of the latter islands by any force based in Japan would be practically impossible with a superior enemy force located at Guam.

This superiority the Americans possess at present and it is projected that it will be maintained. In the further discussion of dockyard necessity Mr. Bywater points out that if none existed in Guam, or if that island were in the hands of an enemy, *any vessel seriously injured in combat near the Asiatic coast would almost certainly founder before it could be withdrawn as far away as Honolulu*, or failing in this, it would succumb to the attacks of aircraft, following destroyers and long range submarines which would undoubtedly accompany the remnants of a retreat. In a dozen places in this interesting volume the author comes back again and again to the demanding necessity for docking facilities in the Pacific and especially the primary importance of a great fleet establishment at Guam, with every facility for the dry-docking, supplying, and repairing of all the vessels which would compose the seagoing force.

The author has a distinct criticism of our present fleet composition and of our building program. It is true, he thinks (and this is confirmed by the statements of the British Admiralty, our own Navy Department, and the Japanese naval office) that the strength of the power at sea still remains in the heavy battleship, and that while auxiliary types are required in sufficient numbers they are useless unless the backbone of the fleet is there. In this regard, however, he makes it evident that while the backbone is necessary, there must be some arms and legs to the fleet, too, and proceeds to call attention to the fact that the necessity which we have always been under of using heavy, old, armored cruisers, or light destroyers, for the scouting and reconnoissance work which fast and sturdy light cruisers should do still exists, and that even our moderate program for turning out 10 of these craft will leave us distinctly inferior to both the Japanese and British in scouting ability. Even if the claims of aircraftsmen are acknowledged in toto, we yet remain behind both nations in scouting equipment. The Japanese are fast at work upon their aircraft carrier *Hosho*, and the British, as we already know, have had several modern and capable aircraft carriers in actual operation for several years. He says that "if naval policy were governed solely, or even mainly, by practical consideration of tactics and strategy, the Americans would now be constructing battle cruisers and fast light cruisers to the exclusion of every other type, for it is certain that the want of such ships would most seriously handicap the fleet in any warlike operations." At present the

British have 45 modern light cruisers and the Japanese 8. We are credited with none. In the building programs Great Britain is completing four of a very strong type, of which the *Hawkins* is one. The Japanese are constructing 11 in addition to their present equipment of 8, and we have 10 under construction—the *Omaha* class.

The Japanese naval officer is described as being of a most ardent and zealous disposition. The author scouts the idea which grew up during the Chinese and Russian wars that he is possessed of any more bravery or audacity than his brothers in other navies, or that any one nation has a lien on courage, but it is pointed out that they take their work in the most serious and thorough mood; that their course of instruction in school and aboard ships as young officers is of the most exacting sort, and that the older officers themselves persist in the study and discussion of their work to the exclusion of almost any other subject. He recounts the case of a number of Japanese officers in England awaiting the completion of some vessels which the British were building for them. They were persistently at work as long as anyone remained in the yard, and on holidays and after working hours their idea of having a good time was to keep themselves busy with blue prints and sketches, or, if the vacation were more extended, to go by train to visit some other dockyard all day and play war games at night. It is said that the restrictions guarding the entrance of the cadets into the officer branch of the navy are such that only those of a very good social class are admitted, and that these are practically restricted to the old military clan. In this regard, however, the recent demand in Japan for popular participation in governmental activities has broken down the barrier which once prevented boys of other than the finest social classes from entering the navy, and it is said that a career in the navy is gradually opening to boys of less prominence. This holds good in both the army and the navy to a small extent, but it is remarked *that the old military clan* still have things very firmly in their grasp in Japan and yield to the popular demand in just so large a measure as will placate it.

An excerpt from the proceedings of the Imperial Diet during the discussion of the last naval program is reproduced here as an example of the fact that the representatives in Japan are becoming very outspoken in their discussion of the Government policy and also that the progress of their navy department in securing the passage of legislation for building programs is impeded by much the same hurdles which prevent our own plans from running down a straight course. A member of the Diet interpellated the representative of the Admiralty as follows:

For how long a period will the requirements of the navy be covered by this bill?

ADMIRALTY REPLY. No definite answer can be returned to that question. The programme now before you is the minimum consistent with our needs to the end of 1924. It is not considered wholly adequate by the imperial navy department, especially as regards the number of cruisers and submarines, these being types to which special importance is attached. Developments in the naval policy of foreign states cannot be ignored by us.

A MEMBER. Does this program take cognizance of current naval expenditure in the United States and England?

ADMIRALTY REPLY. Yes; it was not prepared until the extent of current naval expenditure by those two powers was known to us. Any substantial additions which may be made by either of them would compel us to reconsider our own budget.

A MEMBER. Are we, then, building warships against the United States or England, or both?

ADMIRALTY REPLY. No; against neither. The navy department deprecates such suggestions. But it is obvious that our own program must be influenced by what is being done abroad. I am asked in what relation our navy will stand to that of the United States when all the new construction authorized here and in America is afloat. The answer is, approximately, as 1 to 2; that is to say, we shall be about half as strong as the United States in capital ships. That ratio would be disturbing, and perhaps inadmissible, but for certain corollary factors, *such as our superiority in cruisers, our proportionately larger personnel, and our more advantageous strategical position.*

A MEMBER. The political outlook must indeed be grave if the navy department feels warranted in demanding £68,000,000 for new warships at a time of such pronounced economic stress. The committee would welcome a more detailed explanation of the department's reasons for this heavy demand.

ADMIRALTY REPLY. The program is dictated by requirements of strategy. It was not drawn up without earnest consideration or without due allowance being made for the country's financial situation. Every nation must, however, be prepared to make sacrifices if it desires to be safe from foreign aggression.

Japanese Building Facilities.

Taking up the matter of dockyards and building slips in the possession of the Japanese, the author calls attention to the enormous increase of Japanese building resources which was occasioned by the war. They are much better supplied with means for docking and repairing their fleet in case of a conflict in the western Pacific than any other nation would be, and the author points out that we have no accommodations of that kind at all. The table supplied by him shows that at present there are dockyards in Japan and the following capabilities:

Dockyards capable of building hulls, machinery, and equipment for every type of warship, including dreadnaughts and battle cruisers	4
Dockyards capable of building hulls and machinery for warships up to and including cruisers	4 (or 5)
Dockyards capable of building destroyers, submarines, mine layers, and smaller craft	10

The resources tabulated above were available at the end of 1920, but two or three years hence they will have been greatly enlarged, and by that time the position may be as follows:

Dockyards able to build:

Dreadnaughts	9
Light cruisers	7
Destroyers	12
Submarines	10

The five additional yards that will probably be able to construct dreadnaughts and battle cruisers by 1922, if not before, are the Asano, Mitsui, Susuki, Uraga, and Yokohama establishments. Some of the smaller firms, which are quite capable of constructing destroyers and submarines, are not yet able to manufacure the machinery for these vessels. In regard to oil engines for submarines, the total Japanese capacity in 1919 was estimated at 12 complete sets per annum, viz: 4 sets for large ocean-going boats, and 8 sets for coastal submarines; but the present total is probably much higher. Motors suitable for propelling submarines are built in the Government shops at Kure, Yokosuka, and Sasebo, and also by five private companies: Mitsu Bishi, Kawasaki, Uraga, Suzuki, and Asano.

Attention is called to the popular belief that Japanese shipbuilders are considerably behind American or European ones in technical knowledge or in the items of workmanship which go into construction. This is called a fallacy. Mr. Bywater remarks that they have never been content to be subservient imitators of designs initiated abroad, but that they have always shown distinct boldness and originality in their conceptions of ships and equipment, and that the quality of work turned out by the Government yards has always been distinctly high. The Japanese destroyers which served on antisubmarine and escort work in the Mediterranean were highly praised by foreign observers, and subsequent to their return home proceeded to attain speeds in excess of their trial performances, and this was in spite of their having been on continuous service under the most exacting war conditions.

In addition, the Japanese evolved their own system of armor and underwater protection for large ships as a consequence of experiments made during 1917, 1918, and 1919, at the cost of about $3,000,000. They have developed their own water-tube boiler, which is said to have a higher steaming efficiency than any foreign type, and have proceeded to manufacture the heaviest ordnance and equipment with their own modifications in rifling, breech mechanism, and mounting. Her submarines are said to be not copies of European or American submarines at all, but to have been designed with a distinct eye for her own local requirements, and she has been credited with substantial improvements in naval explosives, projectiles, torpedoes, and mines.

Strategy in the Pacific.

Under this head attention is called to the separation of the American Navy into two fleets, which occurred in 1919, and which resulted in our putting a strong force in the western ocean. This division of force has been persistently criticized because it was con-

trary to the root principle of all military axioms, and the writer notes that it was only attempted after two conditions were fulfilled; first, that each of the two units is strong enough to carry on a first-class engagement with any possible enemy; and, second, that the Panama Canal is now constructed, which allows the two fleets to be merged when the necessity arises. He has one warning remark to make on this point, however, which is to the effect that it is an experience which is very common, that no force has ever been found to be effective in war which was not trained under a single command during the days of peace. Concerning the assumption that the canal would be maintained in a useful condition during hostilities, the defenses of that waterway are described in very accurate detail and the conclusion drawn that they are thoroughly adequate. The chance exists, of course, that a vessel loaded with explosives might get into the canal and blow herself up while in a lock, but the memory of the rigorous inspections which preceded the passage of any vessel through the canal during the late war will reassure any who are made apprehensive by the recount of how simple an operation this would be.

In reviewing the situation which would probably exist in the case of an outbreak of war with Japan, the author assumes that the American naval command would be faced by the necessity of coming to a decision as to whether it intends to wage an offensive war against the enemy or to conduct a purely defensive operation designed to protect the American mainland from invasion. In the latter case it is assumed that no difficulty will be had. With Honolulu as an outpost and the whole Pacific between the enemy's coast and our own, the possibility of a sustained frontal attack by a Japanese fleet is scouted as being absurd. It is made apparent that the sensible thing for the Japanese to do would be to stay at home and await the attack in waters which are close to their bases and fuel supplies. If it be assumed that we could occupy a dignified position by remaining at home ourselves, it has only to be pointed out that Japan has no possessions near our coast and that we have Guam and the Philippines within easy reach of her; that neither of them is defended by a force which would tax her fleet's strength to reduce; that our small cruiser force in the Asiatic would probably be eliminated in the first week of trouble; and that with the downfall of Guam and the Philippines, the situation would be such that it could hardly be expected that American national pride would allow a termination of hostilities in that condition. If the matter were ended at that point, it would certainly be adjudged that this had been a defeated nation.

It is therefore perfectly evident that an offensive campaign would be forced upon this Nation, whether we wished it or not, and this

means, of course, that the fleet would be obliged to move overseas to the locality of the enemy's home bases. It is 4,400 miles from Honolulu to the Japanese coast, and without going into any particulars of fuel consumption and the necessity of fast speed and zigzagging in various areas to escape submarine attack and of the long return home after a fight, it is apparent that Honolulu is too distant for any base of operation of surface ships in the vicinity of the Asiatic mainland. A few long-distance submarines might arrive there, but it is apparent that that is not enough; that the tactics of conflict would necessarily be bent toward bringing the Japanese main fleet to a victorious action or, failing in this, to blockading the Japanese coast to such an extent that the islands could be starved into submission.

A Base in the East.

The existing defenses of the Philippines and Guam are detailed by the author, and it is assumed that their reduction by Japanese forces within two weeks of declaration of war would be matters of perfect assurance. In Guam there is practically nothing to withstand a heavy bombardment. Public declarations from our own writers have repeatedly asserted that the overwhelming of the weak forces in the Philippines would be a matter of ease, and have made it evident that these islands must be defended by the fleet or not at all. It becomes further evident that this fleet must have a perfectly protected base in either the Philippines or Guam where it may be stationed previous to a war, or to which it can be sent, with a perfect assurance of its being guarded in port after its arrival. The first condition, which would presume that our main fleet be kept in the Philippines, is one that may be dismissed. Its fuel and food and transfer of personnel would be matter of such heavy consideration, and its presence would be such an apparent offense to the Japanese, that it is not economical of time to consider it.

The author calls attention to the great number of possible landing places which the islands in the Philippine group have and the fact that Guam, on the other hand, may be easily and thoroughly defended with heavy coast defense artillery, mine fields, and local forces of submarines and aircraft. The ability of submarines and aircraft to defend a shore base which has no fear of an attack from the rear has certainly become almost an axiom in the last few years, and the defense of Guam, as compared to that of the Philippines, would see to be a much simpler affair.

On the assumption that the Philippines have succumed to attack and that a first-class base at Guam remains to harbor our main fleet upon its arrival, the reader is led to consider the progress of the American fleet across the Pacific from Hawaii. This zeal of the Japanese at

the Peace Conference in securing the supervision of the former German islands north of the Equator is easily explained by the flanking position which those islands occupy along the only route of transport from America to the Orient and the knowledge that there are many spots in these islands which can be quickly and easily converted into excellent centers of operation for aircraft and submarines. The line to Guam is flanked by the Marshall Islands, some 1,500 miles to the east, and these contain the harbor of Jaluit, in which the Germans had begun a base for naval operations before the Great War. The Caroline Islands come next, to the west, with harbors at Pulap and Ponape. To the north of Guam lies the Marianno Group, with an excellent base at Saipan. There are in addition, to the west of Guam and lying directly along the route between it and the Philippines, Yap and the Pelew Islands, the latter containing a good harbor at Anguar, where the *Emden* coaled before setting out on her raiding expeditions. It is assumed that in spite of the experience which the United States derived from the transport of a huge army to Europe during the late war the losses attending the transfer of our fleet and landing forces to Guam would necessarily be of a considerable amount, but that the main force would, with any reasonable bit of luck, get through, and, once in Guam (providing it were properly fortified) this fleet would be perfectly safe to rest, refuel, and prepare for further operations from that base. Without Guam, the whole operation is assumed by the author to be perfectly futile.

Mr. Bywater shows to what extent the accumulation of the Japanese population in the big cities and in their lately grown manufacturing establishments has caused a shortage in the crops which used to supply the people; the fact that she now imports about one-fifth of her rice crop from British India and south China, and that the mobilization of the army would still further withdraw men from the productive branches and include them in those forces which eat supplies without sharing in their supply. With Guam in the hands of an enemy who is superior to them in main fleet composition—in other words, an enemy so strong that the Japanese main fleet would be unable to defeat it in a major engagement—the continuation of transport or merchant shipping lines from the Japanese Islands to the Philippines and south China would be greatly endangered. It is to be assumed that cruiser operations (and our notorious shortage in these ships is pointed out as a reason why we would not secure the greatest benefits from the situation), would either stop the traffic south of the Japanese islands or lead to the defense of the sea lanes by such Japanese forces as would eventually bring the two fleets into conflict. In this event, as the Japanese fleet as constituted at present is several knots faster in most of its units than ours, it may be as-

sumed that they would endeavor to fight at as long a range as possible in order to avoid the withering punishment of our much superior broadsides. *If we were not in possession of Guam, and had to return clear to Honolulu subsequent to an engagement, it is apparent that their strategy would be to avoid a decisive engagement; to inflict what damage they could without being overwhelmingly battered, and to take advantage of their superior speed to retire upon the bases near them in their own islands. After the termination of a heavy battle in Japanese waters we would be left to return some 4,400 miles across the ocean, harassed by aircraft, following submarines, and light-cruiser and destroyer forces which would pick off all the wounded and crippled ships. It is also apparent that vessels which were holed at all badly could not be successfully towed, nor could they propel themselves to Honolulu without almost a certainty of succumbing on the way.* With Guam in our possession, however, as a thoroughly equipped modern base, we would probably have to return no farther to our own center of operations than the Japanese would to theirs, and with the Japanese unwilling to come to a final decisive engagement, their lines of communication (and that means their sources of food and trade) would inevitably be surrendered.

The financial situation in both countries is detailed with the evident superiority in favor of the United States and the author goes to considerable extent to demonstrate that the Japanese islands can neither support a long, heavy warfare financially, nor can they support themselves for an extended period with the food they grow at home. He approaches the subject from many angles and from all the sources which contribute in any way to the carrying on of a war, and the answer in every case is "Guam." He calls attention to the fact that we have built and are building a splendid fleet, *but that however powerful it is, if there is no safe base in the East to which to direct it and in which it may repair, dock, and replenish its fuel, it is an absolute inutility; that the strategy of the Pacific and its great distance will render it of no use in spite of its powerful equipment, and that for distinctly less than the cost of several dreadnaughts Guam and the line to the East may be made absolutely safe to us.*

In the end it may be said that this book is a most illuminating discussion of the political and strategical situation which is now occupying the attention of the world. The book is intended for civil consumption and does not need a trained military mind to understand. On the other hand, naval and military men will find it a most comprehensive and plainly expressed review of the irritating features existing between the two countries, the possibilities of conflict, and the very likely form which that conflict would take.

SOUTH AMERICAN POLICIES AND RELATIONS.

Source: Reliable.

(14734.)

6 July, 1921.

The information herein contained was obtained from responsible sources, confidentially, and at least represents the ideas of some persons of prominence in certain of the countries mentioned. It is oriented, of course, from a Brazilian viewpoint.

The dominating idea of Argentine policy is antagonism to the influence and tutelage of the United States in South America. Coupled with this is an intense desire to gain for Argentina the hegemony of the southern continent and, for this reason, other South American countries are urged by her to unite with Argentina for control of their own affairs. There is one exception to this policy. Argentina does not court the concurrence of Brazil. There is more than difference of race and language in this attitude. Argentina does not fear Brazil in a military sense, but Brazil has an area about equal to all the rest of South America combined, and her population about equals all the other inhabitants of the continent. She has great potential power in her natural resources. So Argentina rather fears the jeopardy of her leadership if Brazil were in the association. Hence the latter's exclusion. The national spirit of Brazil, too, is very high and the assertion is constantly made in the press and in Congress that Brazil does and must dominate the continent.

One of the long-standing sources of conflict and dispute in South America is the Tacna-Arica question, the "Question of the Pacific" as it is denominated in the southern continent.

This is a dispute mainly between Chile and Peru, although Bolivia is involved to the extent of seeking an outlet to the sea. At present Chile can throttle Bolivia's commercial life at any moment.

In this dispute Brazil's traditional policy has been to favor Chile, thus securing a strong ally on the western coast, having their common foe, Argentina, between them. This policy was fostered by Baron Rio Branco, Brazil's great statesman and prime minister. Of late years, however, this policy has been neglected, and, indeed, now the press accuse the chancellery of the country of being on good terms with none of its neighbors.

Another factor has entered in, too, to lessen the bond referred to in the previous paragraph. In the days when Brazil and Chile were close together Argentina sided with Peru in the Pacific question. In 1912 Argentina approached Chile and proposed that she, Argentina, would keep her hands off affairs on the Pacific side and would favor Chile if Chile, for her part, agreed to keep out of all questions affect-

ing the Atlantic coast. The object of this was to isolate Brazil. Chile accepted the arrangement and the agreement was made.

Last month a special mission from Chile, headed by her minister for foreign affairs, visited Rio de Janeiro. The underlying motive of the mission is stated to have been a desire to draw Chile and Brazil close together again, as against Argentine influence. Another version is that it was to renew the ABC agreement. The former view, I think, is the correct one. The idea was not warmly received by Brazil, as she rather feels that Chile is seeking to use her for Chile's own interests.

Uruguay is a progressive, prosperous country, but weak in a military sense. It is so situated strategically as to be of immense importance to either side in a struggle between Argentina and Brazil. Being in so important a position and being too weak to defend itself, it would perforce have to take sides in any struggle that broke out.

Uruguay, at least under the preceding administration, favored Brazil and would prefer to line up with her. Argentina is too aggressive in nature to please a weak neighbor. Then, too, there is the long-standing but unsettled question of the Plate River. Uruguay claims jurisdiction to mid-channel from her shore, while Argentina has always claimed jurisdiction over the entire river.

But Uruguay has been Brazil's weakness, military and political, and has deemed it the part of wisdom to conciliate the stronger neighbor, and such is now her policy. In case of an outbreak of war, she would probably favor Argentina.

Paraguay, the backward State, is politically pretty much a pawn between Argentina and Brazil, with Argentina in the ascendancy. Argentina carefully cultivates and fosters Paraguay's adhesion to her. As a legacy of the Paraguayan War (1864–1870), Paraguay was left owing a big indemnity. Most of this was due to Brazil, a much smaller sum to Argentina. Uruguay renounced her claim to indemnity, but Brazil and Argentina never have done so.

Paraguay economically is very dependent on Argentina, in the same way that Bolivia is on Chile, as Paraguay's foreign trade must all pass through Argentina. For this reason a new Brazilian railway was projected some years ago running from Sao Francisco, Santa Catharina, along the Igussu River to the Parana River, whence it would be connected by rail with Asuncion. Some preliminary work in reconnoitering and surveying has been done, but the project is slumbering at present.

Coming to relations between Bolivia and Brazil, we find again suspicions of Argentine diplomacy. As part of the settlement for the Acre territory Brazil made a payment of money to Bolivia.

This was accomplished by the stipulation that Bolivia should build a railroad to her eastern border to connect with a road to be built by

Brazil. Brazil's road (the Noroests) now runs as far as Porto Esperanca, in the Paraguay River, close to the Bolivian frontier, but the Bolivian road is still in contemplation. Meanwhile Bolivia is building a line from Uyani, on the Antofogasta Railway, to La Quiaca, on the Bolivia-Argentina frontier, where it connects with a line direct to Buenos Aires. This is said to be due to Argentina's demand that Bolivia build a line connecting with Argentina, using the money given her by Brazil. Bolivia was too weak to refuse and Brazil felt too weak to interpose. Another view of the question is that western Bolivia is cut off by mountains from her eastern plains, and she fears that if she built a railroad it would be used by Brazilians to exploit and settle eastern Bolivia.

On the northern frontier Brazil has no present vital interests, but it has been pointed out by her leading engineers that the discovery of oil fields in Colombia and Venezuela points to the possibility of these fields extending into Brazil, so that trouble may in future years develop in that region.

Table I.—COMPARATIVE FIGHTING STRENGTHS OF THE FIVE GREAT NAVAL POWERS.

Ships Built.

Type.	Great Britain.		United States.		Japan.		France.		Italy.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Battleships:										
First line	26	635,650	16	435,750	6	178,320	7	161,911	4	89,170
Second line	[1] 6	110,650	15	227,740	4	71,500	7	122,012	5	68,890
Battle cruisers:										
First line	6	175,400	.....	.....	4	110,000	.....	.....	.....	.....
Second line	4	72,100	.....	.....	.....	.....	.....	.....	.....	.....
Cruisers:										
First line	2	37,200	.....	.....	.....	.....	.....	.....	.....	.....
Second line	4	46,100	10	131,300	5	59,200	7	89,472	3	31,228
Light cruisers:										
First line	45	198,945	.....	.....	9	43,850	4	17,802	5	20,678
Second line	14	74,465	3	11,250	1	4,100	1	3,444	3	10,108
Destroyer leaders	20	34,376	.....	.....	.....	.....	.....	.....	1	2,485
Destroyers:										
First line	237	258,022	293	348,247	40	41,328	10	9,468	13	16,051
Second line	15	10,968	21	15,582	12	7,850	36	25,357	29	21,637
Submarines:										
First line	64	49,197	57	34,641	14	10,700	18	13,449	10	7,000
Second line	59	23,743	44	16,735	3	1,050	45	17,860	13	4,992
Fleet submarines:										
First line	14	26,320	3	3,318	.....	.....	.....	.....	.....	.....
Second line	6	7,200	.....	.....	.....	.....	.....	.....	.....	.....
Cruiser submarines	1	2,014	.....	.....	.....	.....	.....	.....	.....	.....
Monitor submarines	3	4,800	.....	.....	.....	.....	.....	.....	.....	.....
Aircraft carriers:										
First line	4	67,200	.....	.....	.....	.....	.....	.....	.....	.....
Second line	3	26,130	.....	.....	.....	.....	.....	.....	.....	.....
Total	533	1,860,480	462	1,224,563	98	527,898	135	460,775	86	272,239

[1] Marked for disposal but not yet sold.

Building Programs.

Type.	Great Britain.		United States.		Japan.		France.		Italy.	
	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.	No.	Tons.
Battleships, first line	4	160,000	11	421,800	7	289,000	....	.....	....	.....
Battle cruisers, first line	....	.....	6	261,000	8	352,000	....	.....	....	.....
Light cruisers, first line	4	29,030	10	75,000	14	84,500	6	31,200	....	.....
Destroyer leaders	1	1,750	....	.....	....	.....	12	21,660	5	12,500
Destroyers, first line	3	4,010	4	4,860	32	31,820	13	16,130	11	9,290
Submarines:										
First line	5	4,590	37	32,118	[1]12	10,368	36	.....	12	12,148
Second line	....	.....	....	.....	8	12,000	....	.....	2	788
Fleet submarines, first line	....	.....	3	4,950	....	.....	....	.....	....	.....
Aircraft carriers, first line	....	.....	....	.....	1	21,000	1	24,830	....	.....
Total	13	39,380	71	799,828	82	800,688	32	93,760	....	.....
	4	160,000	....	.....	....	.....	36	.....	30	34,726

Merchant Marine (Built and Building), 1919.

Gross merchant marine tonnage	....	21,078,503	....	15,807,143	....	2,607,060	....	2,032,115	....	350,000

[1]Details of the Japanese submarine program are not known, but it is reported that she plans to have 120 submarines by 1927.

Note.—The United States has commissioned the *Maryland* since compilation of the above table.

Table II.

Rank.	Item and country.	Amount.	Rank.	Item and country.	Amount.
	National wealth:			Imports:	
1	United States	$350,000,000,000	1	England	$7,949,043,059
2	England	120,000,000,000	2	France	7,081,000,000
3	France	92,500,000,000	3	United States	3,904,406,327
4	Japan	23,500,000,000	4	Japan	1,056,233,254
	National debt:				
1	France	45,109,697,000		Army personnel:	
2	England	38,058,666,000	1	France	1,017,600
3	United States	23,993,234,882	2	England	575,000
4	Japan	1,300,000,000	3	Japan	300,000
	National expenditures:		4	United States	168,000
1	France	5,824,128,225		Navy personnel:	
2	England	5,048,218,080	1	United States	131,040
3	United States	3,973,797,000	2	England	123,700
4	Japan	781,271,399	3	Japan	71,000
	Military expenditures:		4	France	59,324
1	France	1,138,791,180		Merchant marine built and building, 1919:	
2	England	1,007,717,300	1	England.....tons	21,078,503
3	United States	747,518,424	2	United States.....do	15,807,143
4	Japan	387,653,361	3	Japan.....do	2,607,060
			4	France.....do	2,032,115
	Percentage of military to national expenditures:			Navy built:	
1	Japan.....per cent	49.6	1	England.....do	1,860,480
2	England.....do	19.9	2	United States.....do	1,224,563
3	France.....do	19.0	3	Japan.....do	527,898
4	United States.....do	18.7	4	France.....do	460,775
	Population (not including mandates):			Navy building:	
			1	Japan.....do	800,668
1	England	375,553,190	2	United States.....do	799,828
2	United States	117,859,458	3	France.....do	93,760
3	France	82,178,051	4	England.....do	39,380
4	Japan	57,070,936			
	Area (not including mandates):				
1	England.....sq. m	13,139,863			
2	France.....do	3,780,409			
3	United States.....do	3,743,306			
4	Japan.....do	260,738			

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Officer.	Initials.	Date received.	Date forwarded.
Captain			
Executive Officer			
First Lieutenant			
Navigating Officer			
Gunnery Officer			
Communication Officer			
Engineer Officer			
Medical Officer			
Supply Officer			
First Division Officer			
Second Division Officer			
Third Division Officer			
Fourth Division Officer			
Fifth Division Officer			
Marine Officer			

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STATUS AND OBJECTS OF THE BRITISH AIR MISSIONS IN JAPAN.

Source: Reliable.

(13945)

July 13, 1921.

There are three distinct British air missions in Japan. One sent out by the Sopwith Co., through Vickers's representative, in November, 1920. This is almost purely a commercial mission for the construction of naval planes, and was covered in reports Nos. 1152 of 24 December, 1920; 156 of 18 February, 1921; 303 of 30 March, 1921. No public mention has been made of this mission, and very little is known about it beyond its being under a three year contract with the Mitsubishi Co. The number of men reported in it has varied between 12 and 30. When these men first arrived a few were stationed at Oppama, a few at other airplane factories, and the major portion at the Mitsubishi Internal Combustion Engine Works at Nagoya. Those at Oppama have now gone to some other place, probably Nagoya.

The British "civil air mission," now in Japan, is purely a naval air mission, but is divided into two distinct and independent organizations, namely, the flying instructors and the construction advisers. The former were recommended by the British Air Force or Admiralty, and the latter supplied by the Short Co. Lieut. Col. C. H. Meares is, temporarily at least, in charge of the flying instructors, while Mr. O. S. Short controls the constructors.

The flying instructors will be stationed at Kasamigura as soon as suitable quarters are provided there. The construction experts will continue to live at Kamakura and work at Oppama.

Most of the men in both these missions were unknown to one another prior to their departure for or arrival in Japan, and their first knowledge of the mission was receipt of Admiralty telegram asking "if they would consider offer to instruct aviators of a foreign power." Such men do not know yet why and by whom they were recommended. The exception being in the cases of Lieut. Col. Meares, Maj. Dodds, Maj. Sippie, and Maj. Brackley, all of whom are old fliers of long standing acquaintance. Included among the flying instructors are one expert photographer and one expert machine gunner.

All instruction is to be in planes brought out from England. The first instruction will be in Avro planes; this is expected to cover a period of from two to three weeks, after which the students will be shifted to other types of planes. It is expected to have 12 students in a class.

The instructors contracts are for one year beginning February, 1921, and expiring February 1, 1922, in England. This means that they will sail from Japan about December 1, 1921. Five months of their time had elapsed on July 1, and not one student had been instructed. In fact the flying field will not be ready until about August 1.

The primary object of this mission is to teach a limited number of Japanese not only to fly, but the fundamental principles of aviation, so that they in turn will be competent instructors. There are about four months left in which to accomplish this.

The aviation construction mission, on the other hand, has been working at Oppama since the day of its arrival. This work has consisted solely in the overseeing of and instruction in the assembling of F–5 flying boats (which is the only thing called for in their contract). Included in this mission are about 20 workmen from the Short factory, who are doing most of the work, the othres are acting in simply an advisory capacity.

These men state that the F–5 flying boats can make about 110 miles per hour instead of 80, as previously reported.

Considerable friction exists between these two missions (caused principally by the respective wives), which has resulted in their not associating with and barely speaking to each other.

There are, however, unanimous in one thing, namely, denouncing the Japanese inefficiency in organizing to meet an emergency, and their foolish and thoughtless stubbornness.

FRANCE—NAVY—AVIATION.

Source: Reliable.

July 22, 1921.

The official report concerning these experiments was placed in the hands of the writer for a few minutes, and he was allowed to take certain notes the translation of which follows:

Experiments Directed by M. le Capitaine de Frégate (Commander) "Dagerre."

They were temporarily interrupted due to the fact that one bomb had caused a leak in the *Prinz Eugen* which forced her to ground off Porquerolles.

The examination of the vessel showed hits by three bombs of 50 kg. of explosive each, starboard, central, forward part; two impacts fell on the artillery casemates, the third on the sick quarters.

The appearance of the three damaged places was in all respects similar; each appeared as though cut out by a hollow punch, a circular hole having a diameter about 50 cm. in the upper wooden deck and its rmor plate backing about 10 mm. thick; the circular edge of the

hole was calcinated. No fire was caused except in one case, the bottom of the fuel-oil tank near the impact point having been damaged the oil took fire. The bombs appear to have exploded upon impact without delay, notwithstanding their fuses (delai 0.7 sec.).

The entire effect of the explosion seems to have been upward, analogous to the elements of a very sharp cone, and only upward, for no damage was found below deck in the casemates and sick quarters, even to the paint. Electric motors at 3 or 4 m. from the point of explosion were uninjured. The rods fixed to the slide faces were only slightly bent.

The three bombs which struck the *Prinz Eugen* were dropped on the third day; those dropped the first two days at 1,000 m. having been failures, the airship descended to 600 m. as at 500 it felt the effect of the blast of the explosion of a bomb on the water.

Everything seemed as though the bomb exploded on the deck, without any striking velocity. It would be interesting to verify this hypothesis as experiments would then be easier, at least as far as concerns the use of armor-piercing bombs similar to artillery projectiles of large caliber.

FURTHER INFORMATION ON THE HANDLING OF RIGID AIRSHIPS.

Source: Reliable.

July 19, 1921.

The Ascent.

The ascent always takes place against the wind if there are not other very forcible reasons necessitating a different course. In case of necessity one can naturally bring the ship into the air from every position, but these cases are very rare. After the ship is in the right direction for the wind, it will be brought to the landing ground; that is, in that place in the prevailing wind direction where there are the fewest obstructions existing ahead of the ship. For the most part it will be sufficient if the shed, which presents the main hindrance, lies 300–400 m. to the side. Great care must be taken that the momentum of the ship while being carried is not too great, especially during strong, squally winds. The rear car should float clear, the front car should be just so heavy that it can be easily carried. The forward group along with the side groups forward must not change their relative position to the ship during its transport. All ropes should be always kept taut so that undesirable or too strong movements of the ship can be immediately checked. The car crew in the after car should, under no circumstances, support or assist a sideways movement of the ship. The handling officer equipped with a speaking tube, should direct the maneuver at least 50–60 m. diagonally in front of the ship in order to have the best general view of things.

When the ship has arrived at the place of ascent it will be weighed off once more. The crew belonging to the ship who are still on the ground will now be taken in. The ship will be so trimmed that it will be lighter forward than aft. All the handling ropes still hanging out will now be taken in. During the ascent no one must leave the place assigned to him. I ordered that until 3 minutes after the ship had left the ground the people on board could not move about. All motors now are ordered to be started with propeller disclutched. Only when all the motors are reported as running with propellers free are the lines let go. The crew thus relieved take place, as far as there is room for them, on the rods of the front car and hold this hard down on the ground. If there is a clear course ahead, the two side motors are now ordered to run at half speed and the crew to hold back the ship.

If the propellers are at desired number of turns, the forward car is pushed diagonally off from the shed, while this movement is assisted by the rudder through hard port or starboard (provided that there are no hindrances on the other side). At the command "up" (Hoch) the car crew throws the car powerfully up, the direction coxswain lays the rudder amidships and steers according to command; the rear car is not thrown up under any circumstances, but is held up at arm's reach by the crew proceeding along with it, and it is allowed to run out of their hands. Immediately after it has left the ground the two motors which are running at half speed are speeded up to full power, and as soon as it is at all possible all the other motors are also clutched in in order to obtain the most effective guidance possible. If there is no clear course ahead and the ship has to proceed out between obstacles, the ship is made fairly light to gain altitude statically. In this case, also lighter forward than aft, so that under all circumstances the ship is nose up. All the motors are clutched in as soon as the ship approaches the height of the hindrances. It should not be forgotten that airships in picking up speed have the tendency to nose down. One should not nervously ballast, but should await the effect of the elevators, which moment arrives as soon as the ship has got a sufficient speed. This tendency is generally the strongest when the front motors are used. For this reason the forward motors are only permitted to run after all the other motors are running. This effect originates from the fact that the air which is sucked aft by the propellers produces a thinning of the air in front, thereby giving the ship the inclination to nose down.

With a uniform fall in the temperature according to the height and a steady air current the ascent is performed easily and smoothly. When it is gusty, especially on calm summer days, one must take the very utmost care and precaution to see that no gust forces down the

nose of the ship toward the ground, since it frequently requires an immediate and energetic use of ballast forward. When there are cold air layers near the ground, as is often the case in the quiet, clear morning hours, which can be frequently distinguished by low earth mist, a sudden change of temperature of appreciable amount close to the surface of the earth can often cause danger during ascent. If there are no dangerous obstacles for a long distance ahead the speed can be greatly increased at low altitude without any risk, so that the heaviness of the ship can be controlled dynamically. If the ground rises, or if there other obstacles of any kind ahead, ballast should be let go forward in order to attain an inclination of trim; eventually send one or two men from forward to the stern. In ascending when there is no wind, or very little wind, great care should be taken. The ascent is much easier with a great deal of wind, only one must be sure that all motors operate promptly. One more point serves as a principle in ascent: No nonoperating motor should be started during the ascent after going over pressure height. Therefore, if a motor should stop in starting, it should under no circumstances be started again by the machinists independent of orders. The machinists are extraordinarily inclined to disregard this order, since they view the stopping of a motor during the clutching-in of the propeller as something affecting their honor or pride. This order can not be too strictly or too pertinaciously enforced. When during the ascent a motor has stopped, it always remains at "stop" as long as there is no order to the contrary.

If an ascent in a pouring rain can not be prevented, then one leaves the ground with the ship light and slowly lets go ballast, if necessary, from the middle of the ship. In this case all preparations for the flight up to the moment of ascent should be expedited as much as possible, in order to catch as little rain as possible before leaving the ground. During the flight, especially when it covers a considerable period of time, an accumulation of rain water is frequently very desirable. The above point is more true during a snowfall, but it is not necessary to use ballast after the ascent, since a ship in flight scarcely accumulates any snow.

An ascent in thick fog should be made with the ship fairly light and only with enough speed so that the ship is steerable, and only then when one is thoroughly familiar with the country; otherwise it is preferable to rise statically high very light in order to go ahead at a safe altitude.

If the ship runs into an obstacle from some unfortunate circumstance or other, it should not be forgotten that in forcing the ship up by using the elevators the stern will be forced down, so that in order to keep the stern clear the ship must be again nosed down.

Generally, in handling of airships an undesirable movement can easily be checked at the moment of its origin: when it is once in existence, then it is difficult to manage, so that any such movement must be checked immediately, and as soon as the desired effect is noticeable then the power employed for the stopping of this movement should be at once abandoned.

If for any reason or other the ship is obliged to start with wind abeam, because it is being driven off without sufficient room to swing in, then ballast must be immediately let go in all parts most energetically from the moment that this situation is noticed and the ship let go from the ground. All handling ropes remain hanging. All propellers immediately ahead. If this measure is taken early and energetically enough, even high obstacles can be surmounted. The handling lines are then thrown out while proceeding slowly against the wind over the landing ground.

In ascending before the wind the ship is made lighter aft than forward, and this preferably by making the ship, which is trimmed horizontally but fairly light, heavy at the head by sending two or three persons from the stern forward into the very nose of the ship. It is held aft by two side ropes. In front everything is loosened. If there is a slight change of temperature, or if change is anticipated, the ship is made quite light, especially in bumpy, squally winds. At the order "up," the ship is pushed up powerfully at the after car, raised up in front and allowed to run. Only after an absolutely safe height has been reached (about 30–50 m.) are the people who have been sent forward sent back to the stern and the motors set in operation—at first the two rear motors. If the ship can be steered, which takes much longer in this case, and is in the proper position—even use some ballast forward—then the other motors are set in motion.

If the ascending place is too restricted, one can climb by running backward. The preparations for the ascent are the same. The reserve motors remain at "stand by astern"; the others at "stand by ahead." At the order "up," the indicated motors are set running slowly astern, no more than is necessary to rise approximately vertical over the ground. The helms are to be held iron tight, the eventual steering—naturally opposite to that in proceeding straight ahead—only by using very small angular amounts. Only when well clear of all obstacles (ships with bags absolutely full must also be helped out by the use of ballast) are the propellers stopped and the same procedure is followed as in other cases.

To: THE SECRETARY OF THE NAVY.

Subject: Report on results of aviation and ordnance tests held during June and July, 1921, and conclusions reached.

August 18, 1921.

The Joint Board submits the following report on the results of the aviation and ordnance experiments held during June and July, 1921, and its conclusions based thereon.

NATURE OF EXPERIMENTS AND THE RESULTS.

2. Certain ex-German war vessels having been turned over to the United States Government in accordance with the decision of the Supreme Council as to their allocation, the Navy Department decided to comply with the provision requiring their destruction by conducting a series of experiments in which these vessels were to be sunk by gunfire or by bombs dropped from aircraft. In order that both branches of the national defense might gain the maximum benefit the Secretary of the Navy invited the Army to participate in these experiments.

3. In addition to the experiments with the ex-German vessels as targets, one was conducted with the ex-*Iowa* steaming under radio control as a hypothetical enemy. Search was conducted by aircraft and attacks made using dummy bombs from 4,000 feet altitude. This experiment was conducted with a view to obtaining information as to the effectiveness of aircraft in search operations, the ability of aircraft to concentrate for effective attack on a vessel at sea, and the percentage of hits which could be made by dropping bombs from this altitude under the most favorable conditions against a slow-moving target capable of changing course at will to decrease the accuracy of bombing.

4. The aviation experiments were successfully conducted under the direction of the commander-in-chief Atlantic Fleet by the Air Force of the Atlantic Fleet and a Provisional Air Brigade of the Army. The gunfire experiments were conducted by destroyers and battleships of the Atlantic Fleet.

5. The experiments extended over the period from June 21 to July 21, and resulted in the sinking of the ex-German vessels as indicated below:—

Type.	How sunk.	Date.
Submarine U–117	Bombs	21 June.
Submarine U–140	Gunfire	22 June.
Submarine UB–48	do	Do.
Destroyer G–102	Bombs	13 July.
Destroyer S–132	Gunfire	15 July.
Destroyer V–43	do	Do.
Light cruiser Frankfort	Bombs	18 July.
Battleship Ostfriesland	do	21 July.

6. The schedule of experiments was so arranged as to obtain the greatest amount of information for the practical development of aviation and ordnance including weapons, their appurtenances, and projectiles. Boards of observers were appointed by the War and Navy Departments.

7. The experiments definitely determined in each case that the projectiles used were superior to the defensive features of construction of the vessel attacked. It has long been recognized that the gun carried by any type of war vessel is superior at moderate ranges to the armor or protective construction of vessels of like type. In a large measure, therefore, the greatest interest in these experiments lay in the bombing of naval vessels by aircraft. The main features of this report, therefore, relate to the effectiveness of aircraft in offensive action against various types of naval vessels.

8. The Joint Board has carefully studied the reports of the Boards of Observers and as a result of such study, actual observation of the experiments by one or more members of the Joint Board, and general knowledge of the principles of war and methods of conducting war, has arrived at the following general conclusions.

GENERAL CONCLUSIONS.

9. Within their radius of action which, relative to that of naval vessels, is extremely short the effectiveness of heavier-than-air craft carrying large capacity high explosive bombs, depends upon—

(*a*) Ability to locate the naval vessel.

(*b*) Ability to hit the target vessel with the projectile carried.

(*c*) Ability of the projectile to damage or destroy the vessel.

CONSIDERATION OF ABILITY TO LOCATE THE NAVAL VESSEL.

10. Aircraft of any of the three general classes, lighter-than-air ships, flying boats, and land planes, either in combination or singly, have pronounced ability to search sea areas within their radii of action and to locate baval vessels operating in such areas. The high speed of aircraft and the range of visibility obtained by altitude are factors which make these craft especially valuable in the Service of Information.

11. Heavier-than-air craft may obtain the maximum radius of action for use in the Service of Information only by carrying additional fuel in place of heavy bombs. When armed with heavy bombs the radius of action of heavier-than-air types is inadequate for extensive search operations. Therefore, to conduct an effective attack on naval vessels it will usually be necessary to have certain aircraft for searching and others for conducting the attack with bombs.

12. Darkness, fog, falling or squally weather, will greatly reduce the effectiveness of aircraft in search operations. Most of these conditionslikewise adversely affect surface vessels conducting such operating such operations but not to the same extent.

13. The present dependability of the personnel and material of Army and Navy aircraft appears to be such as to insure that search operations, under suitable conditions, can be conducted without an undue percentage of loss. The further development of aircraft will undoubtedly increase both dependability and radius of action.

ABILITY TO HIT THE TARGET VESSEL WITH THE PROJECTILE CARRIED.

14. The number of dummy bombs which actually hit the target during the experiment with the ex-*Iowa* was a very small percentage of those dropped. Other experiments, however, showed that it is not necessary to make direct hits on naval vessels to put them out of action or to sink them, provided the bombs drop sufficiently close to the vessel and the explosive charge is sufficiently large to produce a mine effect of such proportions as to destroy the water-tight integrity of the vessel beyond the control of its personnel and pumps. The effective target for the bomb being, therefore, greater than the deck area of the target vessel, the percentage of effective bombs would be greater than the percentage of actual hits.

15. Inasmuch as these experiments were not conducted under battle conditions it is difficult to draw conclusions as to the probability of hitting a target with bombs from aircraft while in action. Under the favorable conditions existing during the experiments, namely, stationary or practically stationary target, immunity from enemy interference, and excellent visibility and flying conditions, the percentage of hits was greatly in excess of that to be expected under battle conditions.

16. The probability of hitting will be reduced in the case of a target moving at high speed on varying courses; further reduced if the target vessel is protected by effective antiaircraft armament; and practically negligible if the target is protected by effective pursuit planes. On the other hand, the probability of hitting will be increased by more efficient sighting and bomb-dropping control apparatus, by further training, and further development of aerial tactics.

17. In the present state of antiaircraft defense it is believed that if an air force can obtain the mastery of the air, an effective percentage of hits can be obtained against surface vessels coming within the radius of action of bombing planes without an undue percentage of loss of aircraft. Antiaircraft armament is in an early stage of development. The history of war indicates that means of defense develops rapidly to meet the development of offensive weapons. The effective-

ness of the bomb carried by aircraft emphasizes the necessity for the rapid development of antiaircraft armament and for the provision of pursuit planes as a part of the fleet.

ABILITY OF AIRCRAFT TO DAMAGE NAVAL VESSELS.

18. Aircraft carrying high-capacity high-explosive bombs of sufficient size have adequate offensive power to sink or seriously damage any naval vessel at present constructed, provided such projectiles can be placed in the water close alongside the vessel. Furthermore, it will be difficult, if not impossible, to build any type of vessel of sufficient strength to withstand the destructive force that can be obtained with the largest bombs that airplanes may be able to carry from shore bases or sheltered harbors.

19. High-capacity high-explosive bombs hitting the upper works of the vessel are disastrous to exposed personnel, serious to light upper works, comparatively slight to heavy fittings, such as guns, and negligible to turrets. The effect of direct hits was completely local. The most serious effect of bombs is the mining effect when such bombs explode close alongside and below the surface of the water.

20. In the case of major ships the mining effect of a bomb will be materially reduced due to the ability of the personnel to free the ship of large quantities of water by means of pumps to distribute the excess water through the various compartments and to shore up the watertight doors and bulkheads, which are in most serious danger of carrying away, due to water pressure.

21. Aircraft, through the medium of machine guns and fragmentation bombs, as well as by high-explosive bombs of high capacity, possess sufficient offensive power to seriously threaten the exposed personnel of naval vessels unless such vessels are protected by pursuit planes. This emphasizes the necessity for the further protection of personnel and for the provision of aircraft carriers on which such pursuit planes may be based.

22. The effect of the gas bomb has not been determined, but it is believed that such bombs possess offensive power which, within the radius of action of the aircraft, is to-day a serious threat to vessels insufficiently protected by aircraft.

SUMMARY OF GENERAL CONCLUSIONS.

23. At present aircraft possess the following abilities as regards operations with the fleet in areas beyond the radius of action of aircraft based on shore:

(*a*) Limited assistance to gunnery in the control of fire.

(*b*) Limited assistance in the service of information and security.

(*c*) Important strategical and tactical qualities in operations of coast defense.

In adequate quantities they may be the decisive factor in such operations. The availability of these qualities at present depends largely on weather conditions. The radius of action of bombing planes limits their effectiveness against naval vessels to coast defense, or base defense, in which this type is a very powerful adjunct to the present system of coast defense.

24. With reference to the effect of aircraft on future naval construction the joint board is of opinion that:

(*a*) The mission of the Navy is to control vital lines of transportation upon the sea. If no opposition is met from enemy naval vessels this mission can be accomplished without entering an enemy's coast zone within which aircraft based on shore or in sheltered harbors are effective.

(*b*) Without an effective Navy in time of war a nation must submit to an economic blockade fatal to its trade and the importation of necessary materials for the production of war supplies.

(*c*) If heavier-than-air craft are to be effective in naval warfare they must have great mobility, and since their radius of action is not great, additional mobility must be obtained by providing mobile bases, i. e., aircraft carriers.

(*d*) So far as known, no planes large enough to carry a bomb effective against a major ship have been flown from or landed on an airplane carrier at sea. It is probable, however, that future development will make such operations practicable.

(*e*) Even in the present state of development the aircraft carrier, as exemplified by the *Argus* of the British Navy, is a type essential to the highest efficiency of the fleet.

(*f*) Aircraft carriers are subject to attack by vessels carrying guns, torpedoes, or bombs and will require, as all other types of vessels require, the eventual support of the battleship.

(*g*) The battleship is still the backbone of the fleet and the bulwark of the Nation's sea defense, and will so remain so long as the safe navigation of the sea for purposes of trade or transportation is vital to success in war.

(*h*) The airplane like the submarine, destroyer, and mine, has added to the dangers to which battleships are exposed, but has not made the battleship obsolete. The battleship still remains the greatest factor of naval strength.

(*i*) The development of aircraft, instead of furnishing an economical instrument of war leading to the abolition of the battleship, has but added to the complexity of naval warfare.

(*j*) The aviation and ordnance experiments conducted with the ex-German vessels as targets have proved that it has become imperative as a matter of national defense to provide for the maximum possible development of aviation in both the Army and Navy. They

have proved also the necessity for aircraft carriers of the maximum size and speed to supply our fleet with the offensive and defensive power which aircraft provide, within their radius of action, as an effective adjunct of the fleet. It is likewise essential that effective antiaircraft armament be developed.

25. The Joint Board recommends that the provisions of the previous orders of the War and Navy Departments relative to secrecy concerning the results of the aviation and ordnance experiments be rescinded and that this report, if approved by the War and Navy Departments, be issued jointly to the press.

JOHN J. PERSHING,
Senior Member.

Approved:

JOHN W. WEEKS,
Secretary of War

Navy Department,
Approved August 18, 1921.
THEODORE ROOSEVELT,
Acting Secretary of the Navy.

PROPOSAL TO HOLD IN ABEYANCE THE CONSTRUCTION OF THE FOUR NEW SHIPS FOR THE BRITISH NAVY, PENDING RESULT OF THE WASHINGTON CONFERENCE.

Source: Reliable.

July 22, 1921.

1. It is understood that a strong group in the British Cabinet is making every effort to reduce, if not to stop entirely, the building of the four new ships proposed under this year's estimates for the British Navy, according to the Daily Express.

The minority of a committee which includes Admiral of the Fleet Earl Beatty and Mr. Winston Churchill is in favor of proceeding with the construction of the four ships. They point out that if those four ships are not built the British Navy will sink to third place among the World Powers by the end of 1924.

The majority group is understood to be of opinion that the forthcoming Washington conference renders undesirable any expenditure of public money on new warship building at the present time.

The minority group, on the other hand, contend that the country can not afford to wait in idleness for the decisions of the conference, stating that if the conference fails the country will be in grave danger.

The amount which it would cost Great Britain to proceed with her present program has not yet been disclosed to Parliament.

It is stated in shipbuilding circles that the figures of $36,000,000 and $40,000,000, which have been suggested as the cost of each ship,

are exorbitant, as shipbuilding prices have dropped greatly since 1919 when these sums were first mentioned. The amount to be spent during the current year on all four ships is limited to $10,000,000 according to the Admiralty program.

2. Capt. Wedgwood Benn asked the Prime Minister whether contracts for new ships would be placed before the results of the negotiations for naval disarmament were known.

The Prime Minister replied that it was essential for the Government to proceed with the policy of replacing capital ships. This necessarily was not affected by the possible success or failure of the forthcoming Washington conference. Further questioned, the Premier said that assuming that the Washington conference would be a complete success, he did not think that would remove the obligation which the Government was under to build the new ships.

NAVAL ESTIMATES RELATIVE TO BRITISH CAPITAL SHIPS.

Source: Reliable.

July 25, 1921.

This office has endeavored to keep in touch with any developments in connection with the four capital ships contained in the naval estimates, vote eight of which has not yet passed its final reading in Parliament. It is now pretty definitely understood that vote eight will come up for discussion in the House of Commons during the week ending July 30, or the following week. The tentative date set, at the present time, is August 3. The Admiralty expects that certain questions will be asked by Members of Parliament and it appears likely that the following information will be given:

(*a*) The four capital ships called for will be "improved *Hoods*."

(*b*) The length of those vessels will be practically the same as that of the *Hood*, viz, 810 feet between perpendiculars, 860 feet over all.

(*c*) The displacement will be "slightly greater than that of the *Hood*."

(*d*) This increased displacement will be utilized to furnish increased protection to the vessels. It appears likely that this additional protection will be in the nature of increased underwater protection and increased deck protection rather than increased side armor protection.

(*e*) These capital ships will not be laid down in Admiralty dockyards but will be allocated to private firms. There are five firms who are very actively after the work and it appears probable, at the present time, that these ships will be assigned as follows:

One to Armstrong Whitworth & Co., Ltd., of Newcastle-on-Tyne; one to John Brown, on the Clyde; one to Cammell Laird & Co., Ltd., at Birkenhead; and one to Fairfields at Govan, or to Vickers, Ltd., at Barrow.

65640—21——2

In connection with the foregoing, it appears likely that the contracts for these ships will be let on some sort of a cost-plus-profit basis, plus a bonus for cheap construction. The definite terms of this contract are not yet known but it will be some form of sliding scale proposition. This action will be taken in view of the fact that the market is, at the present time, a falling market and the Admiralty desires to take advantage of the fall in prices for material. The Admiralty desires to obtain the best possible prices for material and will make a percentage allowance in each case for overhead or establishment charges. Allowing actual cost of material, it is proposed to have some fixed sum to cover labor and establishment charges and if the ship is built for less than this fixed sum plus material charges, a percentage bonus will go to the contractor as an additional profit. Just what percentage profit is to be allowed, has not, as yet, been announced.

It has been definitely determined to construct the minelayer at the Admiralty dockyard, Devenport. There appears to be nothing unusual in the design of this vessel except the fact that she will be laid down as a minelayer, previous minelaying vessels having been converted; her general characteristics will follow those of British light cruisers.

The submarine will be built by private contract, and it appears likely that Vickers will get the work. This vessel will probably be about 2,600 tons displacement.

GERMAN WARSHIP CONSTRUCTION IN ENGLISH EYES.

Source: Reliable.

(14284).

[An article appearing in the German Weekly "Schiffbau," July 6, 1921, and written by H. Burkner, certificated engineer, formerly head of the shipbuilding department of the Imperial Navy.]

The Spring Meeting of the Institution of Naval Architects.

On March 16, the first day of this year's meeting of the Institution of Naval Architects, the long-anticipated attempt was begun to restore the prestige of the English warship construction which especially was so greatly shattered by the Battle of Skagerrak and the successes of the German submarines. The view regarding the equality or even superiority of the German constructions engendered in the world by the result of the battle itself and through Admiral Jellicoe's subsequent reports, was thoroughly gone into in the form of an opinion of authoritative experts, a project that could be undertaken all the more efficiently inasmuch as the British were in possession of several of our newest ships after the self-sacrifice of our fleet, and the peace terms gave them the power to take from the unarmed enemy, all plans, drawings, and instructions which had been previously kept confidential.

On March 16, Sir Eustace Tennyson D'Eyncourt, the present head builder of the English Navy, gave a talk on the subject, "Notes on Some Features of German Warship Construction," followed by a talk by Mr. Goodall on "The Ex-German Battleship *Baden*." (See Engineering of March 18, 1921.) The discussion following, in which well-known English shipbuilders and naval officers participated and at which a naval constructor of the United States was also present, resulted in the foregone conclusion that "Great Britain had led the way not only in personnel but also in naval material," as the English constructor had already stated in the introduction to his talk, and that the legend existing among the laity as to the superiority of German warship construction was now thoroughly wiped out, as the American representative sedulously corroborated. The impression was nevertheless dampened somewhat, inasmuch as in the discussion Sir Philip Watts, the former chief constructor of the English Navy, and Prof. Sir John Biles, pointed out some deficiencies in the argument through their critical remarks in connection with certain statements of the speaker, and that the American Commander Land designated the verification of England's leadership as not entirely in accord with the traditional English modesty. He only wished to point out that by so doing insufficient consideration was paid to the services of the cousins on the other side of the great pond.

Our Anglo-Saxon critics will understand that we examine their statements from our point of view and submit their authentications to criticism in order to prevent, in so far as it is in our power to do so, the growth of a legend. We have a certain disadvantage on our side in undertaking this task, inasmuch as we are in possession of far less material relative to the English constructions than they "with God's help" have in connection with ours.

In the following discussion I will limit myself to the principal part of Sir Eustace's talk in connection with the construction of battleships and cruisers, since for many years I was chiefly responsible for the development of this branch of shipbuilding in the German Navy.

In order to omit no important point in the discussion of the talk, I will take them in their order. Inasmuch as Mr. Goodall's talk formed only a more detailed exposition of the first, I will limit myself to references thereto as necessity requires. The same is true of the statements of the speakers in the discussion.

THE SPEECH OF THE ENGLISH CHIEF CONSTRUCTOR.

No Change in the English Principles.

After the introductory assertion of England's continuous leadership in the province of warship construction, Sir Eustace T. D'Eyncourt next made the statement that the systematic study of the German constructions, which "happy circumstances" had rendered

possible, had resulted in nothing which would justify a change in the principles recognized by England as correct, up to the present time. The correctness of this assertion can be very justly doubted. The future development of the English warship construction, especially as regards details, will throw the final light on this matter.

Germany Superior in Only Two Points.

The speaker granted Germany's superiority in only two points: In the construction of Diesel motors and in the manufacture of scientific instruments. In replying to the question of Sir John Biles as to the cause of England's backwardness in the construction of Diesel motors, he stated that during the war one hesitated to assume the risk of more than 100 HP. cylinder capacity. We may add here that this backwardness is in no way equalized to-day by England's attempting cylinder capacities of 400 HP. on the score of the German models. The desire for knowledge, which has deteriorated into industrial espionage of everything connected with the construction of Diesel motors in Germany, and the efforts to choke this, are significant enough.

As regards the scientific instruments, in the manufacture of which Sir Eustace also grants Germany's superiority, he is probably thinking of the optical instruments, the electric fire controls, the Kreisel compasses, etc. We acknowlege gladly the recognition of Germany's precedence in this province, not exactly that of shipbuilding, even if we are not ambitious of rendering practical assistance to England's efforts to emulate us in this direction.

German Constructions Good in General.

The speaker now took up the question of German warship construction with the words, "Plans and construction of their ships were in general good and sound; they had the advantage of wider docks for their warships, which permitted a higher initial stability and more freedom in construction." During the war the English dock conditions have been improved, but nevertheless are not yet what they should be.

The Question of Docks and Ship Beams.

This conclusive statement could not have been very pleasing to the English builder, for he not only signified therein a lack of stability in the large English battleships but also indicated a lack of foresight in the development of large battleship construction which one had not been guilty of in Germany.

This reproach, as may be judged, in the last analysis touches the English builders themselves, for their demands for broader docks in spite of practical difficulties and great expense would have surely found ear with the world's greatest sea power if they had been presented in due time and had had sufficient grounds of support.

The question of the stability of the large battleships will be taken up again later. It will only be noted here that the decision to about double the metracentric height in use up to that time had already been carried out in the first German large battleships of the *Nassau* class. The difficulties in connection with a computative predetermination of the action of the ship on the ocean made this new innovation, which had been adopted by no other navy in the world, call for a determination on the part of the responsible builder which Sir Eustace will probably be ready to acknowledge, even if not publicly so.

When he states that on account of the width of our docks we had a freer hand in the construction of our large ships than he and his forerunners, he overlooks the fact that on account of the small depth of our waters, which could not be altered, we were at least as restricted in our construction as the English builders were through the insufficient width of their docks.

The Lineship "Baden."

With reference to the special talk by Mr. Goodall, the speaker took up the criticism of the *Baden*, which he appeared to view as the last word in German warship construction. That the *Baden* has unfortunately remained the last finished large German battleship (it is true that the *Hindenburg* was placed in service at a later date, but it was launched earlier) is the sorrow of those who have devoted their life's work to the advancement of the German Navy. What was constructed after the *Baden* class either fell to the hangman or remained on paper. Besides the two improved sister ships of the *Baden* (the *Sachsen* and the *Württemberg*), there were the battle cruisers of the *Mackensen* and auxiliary *York* class with 35 cm. or 38 cm. guns.

Last Development of the Battleships.

Since Sir Eustace referred with satisfaction to the *Hood* as the last product of the English large battleship construction, it would be of interest to compare it with the type of large battleship which represented the last result of the development of the German battleship construction in the year 1917, and to which Admiral Scheer alludes in his work, "Germany's High Seas Fleet in the World War." I am, however, not authorized to make this comparison publicly. The *Baden* class, nevertheless, was not the last which we had to say on the battleship type even when the experiences of the war had resulted in no fundamental alterations in the general construction or in other important details.

Subsequent Improvements.

Mr. Goodall, in his thorough study of the *Baden*, as was evidenced by his talk, could discover no patching that would point to improvements having been made in the ship as the results of the battle

experiences. This, however, is not altogether true, but it is correct in so far as it is a question of the most important work; our experience did not render it necessary to undertake such comprehensive improvements as England found necessary after the Battle of Skaggerak and we preferred to let the individual points, in which a change appeared desirable, go in order to have our newest battleships more quickly ready for battle. Mr. Goodall's audacious conclusion that Germany did not count on a second sea battle and therefore omitted making subsequent improvements on her ships deserves attention as an example of the way in which England endeavors to make history.

The "Baden" and the "Queen Elizabeth."

Sir Eustace T. D'Eyncourt calls the line ship *Baden* an "interesting ship," but adds, in order to establish the balance, that it was built as soon as Germany was cognizant of the *Queen Elizabeth* class, of which it is a tolerably exact but inferior copy. This statement is comforting to the English pride but has absolutely no foundation whatsoever. In what points are these two classes of ships similar? Only in the caliber and disposition of their artillery and in the general distribution of their exterior armament. All the other important details are so greatly divergent that entirely different ideas of construction find their expression therein.

Artillery.

As far as regards the artillery it can not be conceded that the *Baden* is a copy of the *Queen Elizabeth* since the fundamental model for the armament and its position on the *Baden* class was already approved by the Kaiser on January 6, 1912, after tiresome negotiations and this at a time when no information had reached Germany with reference to the *Queen Elizabeth* beyond the rumor that England was about to adopt a caliber greater than 34.3 cm. The English builder should preserve a little confidence in the abilities of the English naval authorities to surround their new constructions with the veil of secrecy, so that he can not believe that important peculiarities of a new type of English battleship, the first ship of which was launched in the autumn of 1912, were already known to their most dangerous opponent three quarters of a year previous; and only in this case would he have the right to speak of a copy in a very limited way.

As a matter of fact, the *Baden* class was a direct development of the *König* class as far as all the important qualities of the type come into consideration with the exception of the heavy artillery, and even its caliber, number of guns, and their arrangement were already decided upon in the first days of 1912 after independent suggestions from the German authorities.

Armament.

On the contrary it is very apparent that the armament of the *Queen Elizabeth*, in its extent and thickness, finds its prototype in the German *Kaiser* class which was already launched at the end of 1909, and likewise the older German ships had served as the model for this in the mounting of their 15.2 cm. guns, as England always subsequently followed Germany's example from the time of the introduction of the medium artillery of the *Orion*.

The speaker expressed his opinion as to the inferiority of the *Baden* as follows: "The main armament of the *Baden* is the same as that of the *Queen Elizabeth* and the *Royal Sovereign*, but its speed is less than the first and its protection less than the second."

The " Baden " and the " Royal Sovereign."

The second statement is so thoroughly contradicted by the table which Sir Eustace subjoined to his talk that it is useless to waste many words on it. By every single group of the armament over and under water the table shows the numerical inferiority of the *Royal Sovereign*, with the sole exception of the armored deck 50 mm. thick, in the citadelle, the protective value of which, however, against armored shells with good retarding igniters, on account of its elevated position and the steep ascent and on account of the failure of coal protection, is considerably less than that of the corresponding inner protection of the *Baden*, which consists of a low-lying , thickly armored deck, 30 mm. thick, a side-splinter bulkhead 30 and 80 mm. thick, and coal bunkers.

Speed.

Sir Eustace makes an especial point of the fact that the *Baden*, in accordance with the requirements of its construction, ran 3 knots less on the test trip than the *Queen Elizabeth* class and that we, through the retention of the mixed heating in the construction of the *Baden*, were at a disadvantage in so far as concerns the efficiency. In earlier years mention had often been made of the creation of a quick line-ship division. This was an especially pet idea of the Kaiser's, but it was finally abandoned as the *Baden* class was produced. They could have only been effected with inadmissable restriction of the battle power or undue increasing of the displacement through the adoption of pure oil heating. The two reasons for our abandonment of the pure oil heating for all line ships and cruisers, was in the first place the possibility of a sufficient supply of oil in the case of war, and in the second place, the protective value of coal against shells, torpedoes, and mines, while heating oil requires protection on its own part. In the *Baden* class we contented ourselves with the speed of its predecessors, the *Kaiser* class.

Just what practical value can be accorded to the greater speed of the *Queen Elizabeth* is shown by the report of Admiral Jellicoe on the Skagerrak battle—"The fact that the 5th Squadron (*Queen Elizabeth* class) was not in a position to increase its distance from the German ships, as it ran at full speed, is an unpleasant surprise."

Water-tight Compartments.

Sir Eustace then proceeds to the water-tight compartments with the declaration that on the *Baden* and most of the newer German ships they were further developed in some places and less in others than on the English ships, so that the safety against influx of water was the same in both instances. We are unfortunately not in a position to test the truth of this assertion in the case of the *Queen Elizabeth* and *Royal Sovereign* because their plans are not known to us. However, since it is assumed that the foundation for the water-tight compartments has scarcely changed from the previous constructions, we will here make a short comparison between the English ships *Emperor of India* and *Princess Royal*, whose plans fell into our hands during the war, and the German ships *König* and *Derfflinger* that are equal in size and equally old in form.

Subdivisions underneath the armored deck given in percentage of the entire space.

	König.	Emperor of India.	Derfflinger.	Princess Royal.
Small cells under 300	75	70	65	49
Medium divisions, 300—1,000 cbm	25	7	28	9
Large divisions over 1,000 cbm	0	23	7	44
Total space	100	100	100	100

It can be seen from this comparison that the cubic space of the small cells (double-deck, wall spaces, and the like) is approximately the same on the English and the German ships. However, while in the German ships there are far more medium-sized rooms and there is an almost entire lack of large compartments, the latter take up a fourth or the half of the entire subaquatic space on the English ships. The differences in favor of the German ships are so great that the speaker's statements can in no way be made to accord therewith. In comparing the upper ship, the result is also in favor of the German ships. That English experts were surprised by the extensive subdivisions of the upper ship through armored bulkheads and water-tight bulkheads, is shown by a report of the expert of "Engineering," in the issue of October 1, 1920, wherein he writes as follows of the *Baden:* "From the chief deck down, the ship's interior is made up of a mass of water-tight compartments like a honeycomb."

For a further illumination of the question, it may serve to point out that the submerging of the principal machine rooms on one side, with their side adjoining cells, in the case of an injured armored deck would only result in a listing of 17° on the *Princess Royal* and of only 9½° on the *Derfflinger*.

Draining and Flooding Arrangements.

Sir Eustace pointed out, quite justifiably, that the draining and flooding arrangements on our ships were much more complicated on account of the extensive subdivisions, but he must acknowledge that through the systematic organization of the German leak service, which had no equal on the English side, the successful manipulation of these arrangements was assured. If he, nevertheless, speaks of several heavily damaged ships that at the time of the Skagerrak battle were only saved from sinking by this means, in order to prevent any legends we must contradict him by saying that no one of our large battleships outside of the *Seydlitz* and the *Lutzow* suffered even a diminution of their battle efficiency through an influx of water during the battle.

Mr. Goodall, in his lecture, limits himself to a description of the grouping and efficiency of the draining and flooding arrangements, but unfortunately omits a comparison of these with those of the *Queen Elizabeth*. If the latter are no better than those of the *Emperor of India* which are known to us, this omission is comprehensible.

Protection of the Ammunition Chambers Against Flash Fire.

Sir Eustace T. D'Eyncourt also touches on the important point of the protection of the ammunition against sympathetic explosion. He finds from the study of the *Baden* that we undertook no such extensive protective measures against flash fire as England had done, and based this on our great confidence in the explosion security of our powder. The burned child dreads the fire, and the English ship-builders had all reasons after the Skagerrak battle, which resulted in the loss of three English battle cruisers as a result of the insufficient protection against flash fire, of diligently seeking an improvement of the same. It is to be doubted, however, that these constructive measures can alone attain the goal of preventing the sympathetic explosion of the ammunition in the chambers when being struck by shells, torpedoes, and mines, for there are other measures connected therewith which lay in the province of the manufacture of the powder, the chemical experiments, the packing and manner of storage, and a timely attention to these things on the ground of experiments of many years, had assured us an undoubted superiority. In spite of this, we had also to gain experience along these lines, and the fires in the ammunition chambers on the *Seydlitz* during the battle on the Dogger Bank, and on the *Derfflinger* in the Skagerrak battle taught us several lessons that were not in vain.

Comparison of the Large Battleship Types.

After these single points, the English builder turned to the comparison between the English and German large battleship types with reference to the tables subjoined to his talk and giving the important differentiations of type. These tables contain a number of errors, to our disadvantage, several of which will be corrected in the following discussion.

THE BATTLE CRUISERS.

The "Blucher."

Sir Eustace next treats of the battle cruiser, which interested him especially on account of the rôle it played in the Skagerrak battle. That he thereby designated the large cruiser *Blucher* (15,000 tons) as the answer to the *Invincible* class of 17,000 tons and as a ship of very inferior model, calls for rectification. The ship was in no way the answer to the *Invincible*, for England's transition to the construction of dreadnaught cruisers was first known in Germany, as the construction of the *Blucher* had already progressed so far as to permit of no alterations in its armament and chief measurements. The *Blucher* was really the further development of the Scharnhorst type and a very successful construction in the limits of the given military requirements. Its armament was much more extensive and equally thick and in the middle was even thicker than that of the *Invincible*, its subaquatic protection did not limit itself as did the latter to the ammunition chambers alone, but extended over all the vital parts. The ship carried a 15 cm. battery, which was lacking on the English ship, and its maximum speed of 25.8 knots was approximately the same as that of the *Invincible* class and made the cruiser the quickest of all the world's large piston-propelled ships.

The *Von der Tann* was the unfortunately retarded answer to the *Invincible*. The Skagerrak battle had given the ship the opportunity of showing the *Indefatigable* that this "answer" was a right satisfactory one.

Speed.

On the basis of his table, Sir Eustace so characterized the constructive competition between the English and German battle cruisers by claiming that the former were superior in chief caliber and speed, and the latter in armament. However, with reference to the results of the trial trips of our cruisers, certain important inaccuracies in his table must be corrected. The forced mile trips of the German battle cruisers built before the war, which like the English took place in deep water and construction draft, have in comparison to the equally old English ships whose speed has been taken from Sir Enstace's table, resulted in the following:

Trial trips of the battle cruisers.

GERMANY.

Date.	Name.	Construction displacement.	Maximum capacity.	Speed.
		Tons.	*Horsepower.*	*Knot.*
1905				
1907	Von der Tann	19,400	79,000	27.4
1908	Moltke	23,000	85,500	28.4
1909	Goeben	23,000	85,700	28.0
1910	Seydlitz	25,000	88,300	27.9

ENGLAND.

1905	Invincible class	17,600	46,000(?)	25.3–26.2
1907				
1908	Indefatigable	19,100	(?)	26.7
	Lion	26,800	73,800	27.0
1909	Princes Royal	26,800	76,500	28.3
1910	Queen Mary	27,500	85,000(?)	27.8

The three German battle cruisers which made their trial trip first during the war had to perform this with great draft (0.7 to 1.0 over the construction draft) and on the shallow belt mile (35 m. depth), since our only deep mile by Neukrug had been rendered dangerous by the enemy. The great influence exerted by all these unfavorable conditions, not only on the capacity of the engines but also on the speed depending on them, is known to every expert. The speed conforming to the successful capacity of the engines under normal circumstances is given in the following table, and the speed attainable in shallow waters by great displacement is given in parentheses:

GERMANY.

Date.	Name.	Construction displacement.	Maximum capacity.	Speed.
		Tons.	*Horsepower.*	*Knots.*
1911	Derfflinger	26,700	76,600	28.0 (25.8)
1912	Lützow	26,700	81,000	28.3 (26.4)
1913	Hindenburg	27,000	96,000	28.5 (26.7)

ENGLAND.

1911	Tiger	29,000	104,600	28

In comparing these figures it can be seen that the maximum speed of our cruisers was not behind that of the English.

That the restricted use of heating oil on the German cruisers influenced the permanent speed can not be denied. On the trial trip of 6 hours their speed amounted from 0.6 to 1.3 knots less than on the mile. This circumstance, however, does not justify the general statement of the English builder that the German cruisers possessed an appreciably lesser speed than the English and that the *Queen Elizabeth* class had approximately the speed of the German cruisers. The

already mentioned report of Admiral Jellicoe will serve as a commentary to this last statement, in which he complains that the *Queen Elizabeth* class was not once able to come against the *König* class.

The question of the actual head speed has given rise to strong differences of opinion between the builders and officers on both sides, for even on the German side complaints of the front over the unexpected high speed of the enemy were not rare.

Armament.

The English builder characterized it quite correctly as an error that England, in the case of the *Indefatigable* and the following cruisers, continued to fit them with a weaker armament than the German ones possessed. Since he states in defense of unjustified comparisons that English battle cruisers were often to their disadvantage compared with German ones whose models were of a later date, the dates of the models of our battle cruisers which have been taken from the official records are given herewith.

Von der Tann.....August, 1906, to June, 1907.
Moltke and *Goeben*.....April, 1907, to September, 1908.
Seydlitz.....March, 1909, to January, 1910.
Derfflinger and *Lützow*.....October, 1910, to June, 1911.
Hindenburg.....May, 1912, to end of October, 1912.

Perhaps, when opportunity arises, Sir Eustace will decide to publish the corresponding dates for the models of the English battle cruisers. He no longer apparently classes the two weakly armored 38 m. cruisers of 32 knots, the *Repulse* and *Renown*, which were built in 1915, among the battle cruisers, inasmuch as he designated them as special ships for special purposes without disclosing what special purposes they fulfilled. It would perhaps have been unpolitical but pertinent if he had designated them as failures. He never even mentions the two so-called large light cruisers, *Courageous* and *Glorious*. Admiral Tudor, controllor in the British Admiralty, thinks he must fill in these gaps in his speech during the discussion, in which he related the anecdote of how these mongrels "which were to sweep the sea clean of the Germans" sprang from the head of Lord Fischer. A pertinent illustration of the audacious intention to which they owe their creation is given by the cruiser battle of November 17, 1917, the only opportunity, according to our investigations, in which the two ships came into battle, *Courageous* struck the small cruiser *Königsberger* with a 38 cm. shot that fell in the filled upper bunker over the front boiler room without injuring the armored deck or the boiler. On the other hand, her sister ship, the *Glorious*, was struck in the front turret by a 15 cm. shot from the small German cruiser, fire broke out, she turned around and sank.

Cruisers for the Retreat.

The English builder closes the discussion of the battle cruisers with a criticism which can not remain uncontradicted. The impression resulting from the comparison between English and German models of battle cruisers is that the first were built for the attack, because superior in caliber, speed, and bow fire; that the Germans, however, were built for defense and the retreat, since in them more weight was laid on the protection and their armament, and up to the time of the *Derfflinger* their guns developed their greatest efficiency toward the back. The strategists of the two sea powers had correctly foreseen what rôle their ships would have to play. The rôle which the "fleet in being" had played did not exactly give it the opportunity to assume the privilege of attack accorded to it by Sir Eustace T. D'Eyncourt, while the German battle cruisers in their repeated enterprises against the English coast and in the Skagerrak battle, showed off sufficiently their joy in attack. The peculiar idea that our battle cruisers were built expressively for the retreat really needs no refutal, but since it has been shouted to the world through such a reverberating speaking tube, the argument of the English builder must be confuted undauntedly. That the maximum speed of the German battle cruisers was not different from that of the English has already been shown. The choice of a heavy armament is much more the expression of the will "straight on to the enemy" than the renouncement of a good protection which forces one to keep at a distance, and the same is true of the selection of a small maximum caliber whose efficiency decreases more rapidly with the distance of battle than that of the larger caliber. The assertion that the English paid more attention to the head fire than the Germans is quite incorrect in this broad generalization. The mounting of the five turrets on the *Moltke*, *Goeben*, and *Seydlitz* permits a greater firing effect toward the back than toward the front. This arose entirely from constructive grounds. The military exigencies that the ships should have five turrets, a requirement that is not fulfilled in any battle cruiser of other navies, could only be met when two surmounted turrets were mounted in the back instead of the front on account of the space required for the large engines and boilers, with the resultant displacement. No one ever thought of creating cruisers "for the retreat." This idea was reserved for the English critic who very wisely omitted designating the English *Neptune* class on account of a similar turret mounting, as "line ships for the retreat."

The Large Line Ships.

In the following discussion of the large line ships, the speaker stated that Germany had in general followed the example of England

in the type development, with the deviation, however, that the maximum caliber of the English ships was greater and the armament weaker, so that the relative protection was to be estimated as approximately equal.

Caliber of the Heavy Artillery.

It is well-known that the choice of smaller calibers had already given rise to repeated attacks, even before the war, on the creator of the German fleet, Admiral von Tirpitz. The decision arose from the premise that the average efficiency of our 28 and 30.5 cm. guns was equal to that of the English 30.5 or 34.3 cm. guns, if not superior to them, and that the greater fire speed of our guns, amounting to 3 shots per minute as compared with the 2 shots of the English, offered a balance for the smaller explosive effect of the individual shots, so that the limitation in caliber was unobjectionable and the saving in weight was to the advantage of better protection. The unexpected distances in battle which the war brought forth had altered unfavorably the basis of this course of reasoning, but the battle of Skagerrak proved in no way that it was wrong in principle. By making use of the high-firing speed by means of the admirably trained gunners and the firing directed so brilliantly by the artillery officers, the superiority of the German cannons and projectiles was felt in its entirety. The discussion of the question of caliber by H. C. Bywater in the Naval and Military Record of August 4, 1920, shows that this question on the ground of the battle experiences was heatedly debated and disputed in England recently.

Turret Mounting.

As far as concerns the statement of Sir Eustace that Germany had in general followed the example of England in the type development of the large line ships, only one point in this statement is correct, and that is that we had the same gradual transition from the broadside to the diagonal and over to the pure amidship mounting of the heavy turrets as England did, and this, it is true, one or two years after her. This "following suit" was not prompted by the desire to wait for England's example; the reasons therefor lay much more in the military exigencies that the individual squadrons should consist of 8, or the division of 4, ships, made up of the most homogeneous and similarly armed units possible in order to simplify their tactical use and the training of their crews. Since the naval budget only allowed us to build 2 to 3 line ships a year the development in the mounting of the artillery was delayed commensurately. Plans with diagonal and amidship mounting were already presented by the building department in 1907 for the *Ost Friesland* class without being accepted.

Turbines.

There is still one other point in the development of the line ship in which Germany was later than England, which was not mentioned by Sir Eustace, and that is the introduction of turbines in the large line ships. Even if this point is of no particular importance in the valuation of the line-ship type, it must be mentioned here in order to avoid any criticism of partiality. The most important reason for the retention of the piston engines, up to and including the *Ost Friesland* class, lay in the fact that the engine efficiency required could be concentrated quite comfortably in three piston engines which took up less machine room than the corresponding turbines, while the other advantages and disadvantages of the two systems in the stage of development existing at that time counterbalanced each other.

Armament.

In all other connections, the statement that Germany followed the example of England in the development of the large line ship, must be denied. The contrary is especially the case in the question of armament. Outside of the gradual increasing of the thickness of the armament, which, even in the latest English constructions, was not equal to ours, England also later followed our example in the scope and extent of the armament. Even in the *Orion* (1909) she remained behind the *Nassau* (1906), and only in the case of the *Iron Duke* (1911) did the armament come anywhere near the percentage of the upper work possessed by the *Kaiser* class, three years older. It has already been mentioned that England first introduced in the *Iron Duke* the correctly calibered armored 15 cm. battery, which was not lacking in any of our large battleships. Only the low position of the armored decks, the heavy armament of the under construction of the conning tower, the side-splitter bulkheads in the upper ship, and the separation from each other of the gas and splinter protected guns of the central citadel, England had not yet copied from us.

Subaquatic Protection.

England followed far behind us in the systematic development of the subaquatic protection against torpedoes and mines. The speaker touched on this point very diplomatically, as follows: "The German ships were fitted with a more extensive protective bulkhead for subaquatic protection than we constructed in general, while our protective bulkhead in the territory of the ammunition chambers was mostly thicker than theirs." It is worth while to discuss this point a little further.

Development of the Subaquatic Protection in Germany.

The systematic development of a trustworthy protection against subaquatic weapons for all vital parts of the large battleships had

begun in Germany already in 1905 and was continuously carried further through uninterrupted explosive tests on models and on a 1,700-ton floating target until the war put a stop to the experiments. There is no information at hand from any foreign navy that would point to the fact that they had instituted and successfully carried out such systematic experiments. The changing and varied forms of this protection in the English ships, its limitations to the ammunition chambers in the majority of cases, the method of construction, the stiffening and method of fastening the protective bulkheads, their distance from the sides, and the divisions and filling of the protective cells, show by themselves that the equivalent had not taken place. To judge the value of a subaquatic protection it is in no way sufficient to merely give the thickness of the plates of the protective bulkheads, as was done by the speaker, and it is an evidence of an insufficient knowledge of important points when the English naval constructor Bassett in his discussion of the heavy form of our newer torpedo bulkheads, gave as an example thereof that we had introduced "many expensive and useless details" on our ships.

Blister.

That England finally during the war introduced the necessary construction of the blister or bulge and not only added it subsequently to finished ships but also to the new construction, is no epoch-making improvement. As the blister finally developed, it is in principle nothing more than the German torpedo protection laid on the outside. The advantage which Sir Eustace brings out in his discussion that in this way the effect of the explosive gases remained on the outside of the ship is, according to our experience, not of any especial significance; on the other hand, the situation on the outside gives rise, among others, to the very great disadvantage that consideration of the water resistance obliges the blister to be made narrower and in this way its protective value toward the end is very greatly decreased. There is also a diversity of opinion in England as to the value of the blister, as could be seen from the speech of Sir Philip Watts in the discussion.

Results.

Of all the German ships equipped with subaquatic protection only the *Blucher* was sunk through enemy torpedoes—a report speaks of seven such sinkings—after it was shot to a wreck through the artillery. (In order to correct false statements, it has been firmly established that the *Lutzow* was never struck by a torpedo during the battle of Skagerrak. The ship was heavily damaged through the artillery and on the day following the battle was quickly sunk by a torpedo at the orders of its commander after everyone had left it.) Besides this

cruiser the following German ships with subaquatic protection were struck by torpedoes or mines:

NOTE.—The dagger indicates that the torpedo or mine struck in the territory of the torpedo bulkheads.

Westfalen	1 torpedo †
Ostfriesland	1 mine †
Kurfurst	1 mine † 1 torpedo
Markgraf	2 mines † †
Kronprinz	1 torpedo †
Bayern	1 mine
Moltke	1 torpedo † 1 torpedo
Goeben	2 mines † † 3 mines † † †
Seydlitz	1 mine 1 torpedo †

None of the ships were thereby put out of action or made incapable of manœuvering. Even the *Goeben* finished its tactical tasks after having been stuck two or three times by mines. It would have been right instructive if Sir Eustace had furnished a like table of the large English battleships that were struck by torpedoes or mines during the war. He mentions only the *Marlborough*, which remained capable of performing manœuvres, but he is silent over the loss of the *Audacious* through a German mine on October 27, 1914. It is also remarkable that this sister ship of the *King George V* is also not to be found in the table appended to the talk. Is it only supposed to have existed in the fancy of the malicious?

If England is not in a position to furnish a list of equal authority for the effectiveness of the subaquatic protection of her ships as is contained in the above list in connection with the German ships, it can never raise the claim that its constructions were equal to the German along these lines. In closing his discussion of the subaquatic protection the speaker states that the experiences gained in the war have shown the invulnerability of the modern battleships against subaquatic weapons, and Admiral Tudor declared in the discussion that this fact would have an effect on England's future constructive naval policy. Both apparently overlook the danger threatening the sides of the ship through the development of the torpedo projectiles and to the bottom of the ship through the perfection of the automatic distance ignition for torpedoes and mines.

The Seaworthiness of the Large Battleships.

Regarding the seaworthiness of our large battleships, the speaker states that they were not very different in this regard from the English ships. Their "somewhat greater" stability under certain

maritime conditions had caused them to roll greatly but did not affect them as firing platforms in the North Sea. In the discussion, the American Commander Land thought he must amplify these statements by saying that the English and American knowledge of the conditions existing in the open sea caused them to doubt the good conduct of the German ships as firing platforms if they had gotten into the North Atlantic.

Metracentric Height.

The metracentric height of our large line ships and battle cruisers lay between 2, 3, and 3.0 m. It was therefore not only "somewhat greater" but twice as great as was generally conceived admissible for good sea properties and as was practiced by England even up to recent times. The risk which lay in this break with tradition was accepted by us in consideration of the advantage of a larger beam for subaquatic protection and for the limitation of the listing in putting the helm down, in broadsides, and by the influx of water. We had reason to be all the more satisfied with the conduct of our ships on the sea, and this not only by every possible kind of weather in the North Sea. The only instance of a strongly rolling movement was noticed in the case of the *Von der Tann*, which listed up to 17° in 1911 in the Biskaya in a heavy sea and a wind of 9. Such bitter experiences as England had with the rolling of the *Dreadnought*, *Orion*, and *Lion* were spared us. If it is also admitted that the English and American large battleships had more opportunity of being on the ocean, our experiences limited themselves by no means to the North Sea, Baltic, and Mediterranean. In the spring of 1911 the *Von der Tann* traversed the Atlantic, and in the summer of 1914 the *Kaiser* and *Konig Albert* likewise, and had proven themselves the most admirable ocean vessels and quiet platforms in all weather and under all sea conditions, as the log books distinctly show.

Rolling Steam.

The interest which was at first devoted, out of theoretical considerations, to an artificial steam apparatus or fixture such as the Frahm rolling tank for ships with high stability lost ground, since the rolling keels demonstrated themselves as thoroughly adequate. It was never once necessary to give these such gigantic proportions as occurred in England where, in addition to these, rolling tanks were also built in a number of battleships, as on the *Tiger* and the *Iron Duke* class. As was shown by Mr. Goodall's talk, the surface of the rolling keel on the *Royal Sovereign* was more than twice as much and its water resistance more than twice and a half as much as on the *Baden*.

THE SOLIDITY OF THE LARGE BATTLESHIPS.

Stringers.

Sir Eustace now turned to the solidity of the large German battleships and stated that according to his calculation their stringers were constructed for from 10 to 20 per cent greater demands than those of the English ships. It was our bottom coating which seemed to him extremely weak, and he had the impression that many portions of the construction were scarcely proportioned to the local claims made on them and the ordinary wear and tear. If the very cautious form of this criticism shows that the English builder avoided a flat condemnation of our principles of construction, he was driven into the corner in the discussion of Sir John Biles, who advocated that one should follow our example, in so far as we had received no reverses. Sir Eustace declined this suggestion in his closing speech on the grounds that there must be an overplus of solidity since one would not wish that a ship should break its back already on the occasion of slight injuries in battle. If this reason is to be taken seriously, then the question is well timed as to just where one should set the limits for the overplus of solidity in a warship.

Commander Bassett hastened to the aid of his builder with the remark, "that as a matter of fact we had suffered many collapses of our highly strained constructions," and gave as evidence thereof that the upper construction of the Berlin Elevated had to be strengthened with wooden supports for stretches miles in extent. Is that all the evidence he has? Even when this subsequent work on the Elevated was not only destined principally to secure the tracks in another way, but was necessary for the support of the upper work, even then the very peculiar conclusion in connection with the construction of elevated railways would demonstrate nothing in connection with shipbuilding.

Nevertheless, it is a fact that for decades we have never had to register collapses of stringers on our war vessels, either in the dock or on the ocean. Also we have not had to do away with the weakness of the stringers through subsequent strengthening of the stringers, as the English, for example, had to do in the neighborhood of the fore turret of the *Courageous*, after a bad weather trip, and in the forward part of the *Renown* after firing. Our ships had ample opportunities in all kinds of weather and in all conditions of sea to test their solidity, but in no case did a weakness of the stringers evidence itself, to say nothing of a collapse having taken place. Also the numerous cases of heavy ships running aground, which took place in our shallow waters, gave no ground for the necessity of adopting a stronger method of construction on account of its effect on the ship's bottom.

Bulkheads.

The security of the bulkheads, which, according to Mr. Goodall's evidence, were built 25 per cent lighter than the English, had not only shown itself absolutely sufficient under the high-pressure test to which they were all subjected in construction, but even equally so in serious cases. Naturally their permanent security and thickness depends on their good preservation.

Gun Stands.

Weakness never occurred in the gun stands and the turret supports since we have constructed them according to our new principles. If occasionally in the tests, local weaknesses evidenced themselves on the upper decks and the upper constructions, which required local strengthening, this is explainable on account of the difficulty of computing in advance the gas pressure and is something which occurs often in all navies.

Development.

As has already been mentioned in another place, Commander Bassett, who took advantage of the armistice to thoroughly study the war vessels in our harbors, believes his criticism justifiable when he considers that we went to a lot of bother with useless and expensive details. Mr. Goodall's talk is not tuned to this high and mighty tone; he reiterates again and again the systematic development of the details on the *Baden*, and in many of his remarks may be read between the lines that he found many better things than he was accustomed to in the English shipyards. Nevertheless, after our inspection of the newest English ships, who paid us that "friendly" visit in Kiel in the early summer of 1914, we were convinced that the English construction was behindhand in the saving of weight through careful development of the details.

We may register it as a success that through practical tests, scientific reasoning, constructive novelties, and detailed work, not only on the stringers but on the completed whole, we achieved a lesser weight of the ship's body than other navies who complacently accentuate their leading position in the province of shipbuilding.

The Small Cruisers.

In discussing the small German cruisers, which was the next subject touched upon by Sir Eustace T. D'Eyncourt, he failed to go into the subject in detail. Whether he did this through lack of information thereon or because of undervaluation he did not say. However, his few remarks were of such a nature that a greater attention must be devoted to their criticism.

In order to form a picture he compared offhand, in a table, the German cruiser *Cöln*, begun in 1915, with the last ships of the English D class of 1918, a not entirely satisfactory procedure and one which

he had himself previously condemned in the discussion of the battle cruisers. The picture is all the more distorted, as he gave the maximum capacity of the engines on the *Cöln* as 29,000 horsepower, the maximum speed as 27.5 knots, while the ship really had a capacity of 48,700 on the shallow mile, while it has a draft of 0.8 meters more than the C. W. L., and accomplished these 27.5 knots in a water depth of only 35 meters. As the result of trial trips and towing tests, we are in the position to compute with great exactness the speed attained by these unfavorable conditions to that attainable in deep water and construction draft. The computation in the case of the *Cöln* amounts to a speed of 29.3 knots with the capacity of 48,700 horsepower.

Speed.

Since Sir Eustace made the general statement that the small German cruisers had attained a speed of some 2 knots less than the English, a table of comparison has been made between the small cruisers of both navies built since 1909. In the case of the English ships, the latest edition of "Jane; Fighting Ships" has been used owing to the lack of direct sources, and the reliability of this may be assumed as far as English ships are concerned. For the German ships, which during the war had to travel on the shallow Belt mile with great draft, the speed and construction draft have been changed accordingly.

The table demonstrates the untenability of the statement of the English builder. All German cruisers that were built before 1913 were quicker than the English of like date and this up to the extent of 1½ to 3½ knots, while the later ones were practically equivalent to the English in maximum speed. The last 10,000 and 8,000 ton large classes, *Raleigh* and *Emerald*, which find no equivalent German ships of the same age, exceeded appreciably the speed of 29 knots which we attained in the *Rostock* in 1911 and the English first in 1913 with the *Champion*.

Also in this comparison we will admit, as in the case of the battle cruisers, that by the failure to employ pure oil heating (the reasons impelling such having been given previously) we were at a disadvantage in high-speed trips of long duration, as also the firing is more difficult on account of the accumulation of cinders and the trimming of the coal with increasing steam. In every case the results of the 6-hour trips of our small cruisers only showed a decrease of 0.8 to 1.2 knots against the maximum forcing on the mile. It is also an unquestionable fact that the poor quality of the coal during the war also had its unfavorable influence on the capacity of the boilers, but nevertheless had nothing to do with the constructive value of our cruisers in comparison with the English.

Trial trips of the small cruisers.

GERMANY.

Date.	Class.	Construction displacement.	Maximum capacity.	Speed.
		Tons.	*Horsepower.*	*Knots.*
1909..	Breslau	4,570	33,500	27.6
1910..	Strassburg	4,570	35,500	28.3
1911..	Rostock	4,900	44,300	29.2
1912..	Graudenz	4,900	42,500	29.2
1913..	Wiesbaden	5,190	39,500	28.6(27.4)
1914..	Königsberg	5,330	45,900	29.4(27.6)
1915..	Cöln	5,610	48,700	29.2(27.5)
	Brummer	4,320	42,800	29.5(28.1)
1916..				
1917..				
1918..				

The figures in parentheses indicate a depth of from 28 to 35 m. and a draft from 0.5 to 0.8 C. W. L.

ENGLAND.

1909..	Weymouth	5,330	23,500	25.9
1910..	Chatham	5,490	25,900	25.7
	Active	3,500	19,500	26.0
1911..	Southampton	5,490	26,000	26.5
1912..	Birmingham	5,530	26,400	25.6
	Arethusa	3,560	32,200	27.5
1913..	**Comus**	3,810	32,600	28.4
	Champion	3,810	41,000	29.0
1914..	**Cambrian**	3,810	42,300	(?)
1915..	**Calypso**	4,190	43,300	29.3
1916..	**Ceres**	4,260	39,400	29.1
	Raleigh	9,910	71,400	31(?)
1917..	**Duanae**	4,730	41,300	29.2
1918..	**Despatch**	4,840	40,000(?)	29(?)
	Emerald	7,730	80,000(?)	33(?)

The classes in bold face have exclusive oil heating.

Mounting of the Guns.

The speaker also stated that in the most of her modern cruisers England had employed the manner of mounting all her guns amidships. This she could do so long as the number of guns did not exceed four to six, but the length of the ship was not sufficient for this when the guns numbered seven and upwards. That we also chose the pure amidship mounting in the case of a small number of guns is evidenced by the *Brunner* class of 1915 with its four 15 cm. guns. The advantage claimed by the speaker that for the equal broadside fire the amidship mounting permitted the economy in the number of guns is further equalized by the loss in bow and stern fire.

Armored Protection.

Sir Eustace claimed the chief difference between the English and German small cruisers was the manner of their armored protection without saying which he considered the better.

With the introduction of the side armament on the *Breslau* class in 1909, we have preceded the English Navy by three years, inasmuch as it only introduced it in 1912 on the *Birmingham* class.

On all the new English cruisers the side armament, reaching to the upper deck and constructed of 50 mm. nickel steel which rested

on an outer coating 25 mm. thick and extended only over the engine and boiler rooms, formed the only side protection of these especially important battle attributes for a small cruiser. In juxtaposition to this the German cruisers had a nickel steel armament of 60 mm. thickness which extended over 80 per cent of the entire ship's length and reached 2.1 m. over the water. Back of this there lay the 20 mm. thick curved-armored deck, and between the two armaments there were broad coal bunkers almost for the entire length of the engine and boiler rooms. Without doubt the side protection of the entire engine rooms against projectiles was much more effective in the German method. This was also true in the case of the decks. Every explosive and every explosive effect that struck through the 25 mm. thick upper deck of the English cruisers immediately struck the boiler or the engines, while the light upper deck of the German cruisers exploded the shell at a distance from the armored deck, which weakened its effect, which striking where the bunkers are situated is lost in the coal. A heavy shell such as struck the *Königsberg* on November 17, 1917, without destroying its boilers (see above) would have put any small English cruiser out of action.

Against the ammunition chambers the side armament of the English cruisers had only a thickness of 37 mm. on an outer coating of 19 mm. and is only immaterially greater than the 60 mm. thick armament of the German ships behind which the 20 mm. thick armored deck lay as second protection that was increased in its effect through sacked coal. In the later English cruisers the deficient protection of the ammunition was improved by making the deck of the ammunition chambers 25 mm. thick and the upper part of their side walls 12½ mm. thick.

The German cruisers have an armored deck 40 mm. thick over the rudder and the English one only 20 mm. thick.

In drawing up the comparison the conclusion is entirely justified that the German cruisers were superior to the English in armored protection.

Water-tight Compartments.

That the water-tight compartments of the English cruisers were also not equal to our own is shown by the fact that in their cruisers the engine and boiler parts are placed in six rooms, while in our small cruisers they are placed in from eight to eleven rooms. With the great saving in the length of the boiler rooms through the limitation of the number of the boilers and the increasing of their size, which Sir Eustace especially emphasizes, it is true the English builders have saved displacement but have decreased beyond all measure the number of the subdivisions and the boiler power reserve in the case of the breaking down of a boiler.

Security.

In his discussion of the small cruisers the speaker claimed that their stringers had far greater claims made on them than the English, and in his table of comparisons between the *Cöln* and the D class gave as example the extremely small plate thickness in the bottom and in the upper deck of the *Cöln*. He does not seem to notice that already since 1909 our small cruisers have been built according to a system of long frames, which is fundamentally divergent from the Isherwood system and withstands much better the scientific tests. This system had proven itself so good that we have used it for the underpart of the battle cruisers since the *Derfflinger* and intended to use it for the entire ship's body of future large battleships.

Displacement.

Sir Eustace also states that the German cruisers, in spite of the high claims made on their stringers, had in general greater displacement and smaller speed than the English. Both statements are absolutely incorrect as far as concerns the cruisers built up to 1912. They were smaller and quicker than the English of the same age. What concerns those built later, the statement of lesser speed of our cruisers has already been corrected in the preceding discussion. It is quite apparent that an armament of from four to six 15.2 cm. guns requires a lesser displacement than an armament of eight 15-cm. guns, as all the newer German cruisers contained, nevertheless the principal reason for the smaller displacements of the newer English cruisers, amounting to from 800 to 1,400 tons, was the fact that they were built essentially for service as fleet cruisers, while the German cruisers, besides their service as station vessels in foreign waters, were designed to act as commerce destroyers. On account of the small number of small cruisers which the naval budget permitted us to construct each year both purposes had to be united as well as they could. Attached to this there was a greater cost for the construction and the equipment and above all the greater weight and the greater room length which were given the engine and boiler parts in the interest of a greater security of operation, as, for example, may be seen in the following table of comparison:

Engine rooms of the small cruisers.

	Construction displacement.	Maximum capacity.	Weight of machinery.	Length of engine and boiler rooms.	Number of boilers.
	Tons.	*Hp.*	*Pounds.*	*Feet.*	
Coln	5,610	48,700	1,300	58	14
Calypso	4,190	43,300 abo.	900	43	6

The two mine cruisers, *Brummer* and *Bremse*, built in 1915 and not destined for foreign service, are an exception to this, approximating more closely in the construction and in the development of the engine and boiler parts, the English fleet cruisers.

GENERAL REMARKS.

The conclusion of the statements of Sir Eustace T. D'Eyncourt in connection with the German line ships and cruisers, contained a number of general remarks in connection with the comfort, watertightness of the bulkheads, position of the bunkers, steam course, and time of construction.

Comfort.

He said: "The comfort of the German ships was doubtlessly less than that of the English,the crew had much less space, the ventilation and fitting up of the rooms was poorer." It is quite clear that in those English ships which employed pure oil heating, there was a much greater space for living quarters, especially for the crew rooms, than on the German ships which had all the large coal bunkers in the upper ship. If one takes English ships with coal bunkers to make the comparison, then there is a very great difference in the space at the disposition of the staff alone. As an example of this, a comparison between the line ships *Konig* and *Emperor of India* will suffice, this comparison being based on the plans of the ships.

Ground space of the living quarters in cm.

	Konig.	Emperor of India.
Cabin	36	56
Admiral	23	65
Chief of staff	19	35
Commander	21	34
Mess	106	182
Officers and deck officers' staterooms	445—5.8 per head.	351—7.5 per head.
Men's rooms	2,400 — 2.12 per head.	1,840 — 2.04 per head.

Since a warship has a totally different purpose than a passenger ship, it must be considered as an advantage of the German principles that in contrast to the English they resricted the claims of the cabin occupants in connection with cabins and mess rooms to the very least possible.

This is also true of the simpler equipment of the living rooms on the German ships, in which the principle of the saving of weight and the fire safety had a far-reaching effect. We know through our inspection of the English ships in June, 1914, that England permitted the use of wood and other ignitable materials for furniture, stair doors, and such like, even in her newest ships, and held it far justifi-

able to sacrifice the safety of the warship for comfort. The recognition which Mr. Goodall in his talk pays to the fine sheet-metal work on the *Baden*, the development of which resulted from the desire to construct a fireproof construction, appears to be an indication of another point in which the English ships can still learn from the Germans.

In how far the ventilation of the living rooms on our ships was insufficient, as Sir Eustace states, is not shown either in his talk nor in that of Mr. Goodall. It was this point especially to which we devoted especial attention by drawing on the assistance of the first authorities on ventilation, and we can only consider the statement of the English builder as a mere "facon de parler," so long as he does not produce tangible evidence.

Just how contradictory the English judgment of the comfort of our ships is can be shown by two examples. Mr. Goodall declared the living rooms for the officers and men on the *Baden* as exceptionally poor; the Naval and Military Record of March 30, 1921, writes, on the contrary, that in the inspection of the German cruiser *Nurnberg*, the opulence of the cabins and mess rooms and their admirable ventilation were surprising, and that the cabins on the *Baden* were very comfortable and well ventilated. How are these two criticisms to be reconciled?

Water-tightness of the Bulkheads.

The superiority of the water-tight subdivisions on the German ships, which has apparently given rise in England to undesirable debates, Sir Eustace tried to depreciate through reference to the doors, canals, and pipes which pass through many of the bulkheads. No person comprehending the facts will deny the truth of this assertion. It is only doubtful whether the English builders have succeeded in avoiding such a piercing of the bulkheads. Where they are unavoidable, and this is unfornately true in many cases, the only thing to do is to diminish their disadvantage through the decreasing of their size and through the safety and isolation devices, the adequate manipulation of which must be done through a systematic training of the personnel, such as has been accomplished through the typical "leakage" service on our ships. Neither the number of these piercings nor the detailed carrying out of many details on the *Baden*, for that matter, represent the last which we have learned in this province through the experiences of the war.

Position of the Coal Bunkers.

Sir Eustace criticised our ships in that many coal bunkers were placed in very inaccessible places. This is only true in the case of our large battleships, by which the good protection which the coal furnished against the action of subaquatic weapons made it possible

to store an appreciably small part of the entire fuel supply (about 5 to 10 per cent in the battle cruisers and 15 to 20 per cent in the line ships) in protective bunkers alongside the engine and ammunition rooms from where, in cases of exception, it could be taken and used as fuel. We preferred to use a portion of the fuel for this very important purpose rather than to increase the dead weight of the ship by employing other protective measures that had to be carried along continually as ballast, which seems to have been the case in the individual blisters on the English ships.

Steam Course.

In discussing the steam course of our warships the speaker said that in general it was equal to the British. This statement, however, is not absolutely correct. If the heating value of the oil is computed as 25 per cent higher than that of the coal and the efficiency of the turbines with gearing 30 per cent higher than that of direct driving for marching, it therefore comes as a result of the fuel supply of the single-ship classes and their displacements, that the large English line ships from the *Dreadnought* to the *Royal Sovereign* possessed an average steam course 20 per cent greater than the German line ships from the *Nassau* to the *Baden*. The same condition is true in the case of the battle cruisers, with the exception of the *Tiger* which with its enormous supply of fuel (according to Jane, 3,380 tons of coal and 3,540 tons of oil) outstripped the *Derfflinger* class in steam course by about 40 per cent. The chief reason for the steam course of the large English battleships being on an average about one-fifth greater lay in the extensive or exclusive use of oil which could be stored in rooms on board which could be used for other purposes with the exception of coal. In the newest English ships there was also the economy of the frictional gearing. The following is true of the small cruisers built since 1909: Just so long as England employed mixed heating and direct motive power, that is, up to the *Birmingham* class (1912), the steam course was 25 per cent shorter than that of the German cruisers of the same date. With the transition to pure oil burning and the introduction of the frictional gearing in the cruisers of the C, D, and E classes the whole picture was changed. Since we were obliged to retain the mixed heating and only introduced the gearing as an experiment on the *Karlsruhe* (frictional gearing) and *Wiesbaden* (Fottinger converter) the steam course of the English cruisers amounted to approximately the same as that of our cruisers, in spite of their fuel supply being half so large. Only the *Karlsruhe, Wiesbaden, Brummer,* and *Bremen* retained a steam course from 20 per cent to 30 per cent greater.

The above details were necessary to establish the real conditions Even if they do give a somewhat more unfavorable picture of the

large German battleships than the short statement of the English builder, nevertheless they do not make an important difference in the valuation of the sea worthiness of the two navies. This authentication furnishes a striking illustration to the statements which Admiral Tudor deemed wise to bring forth in his discussion. The admiral stated, among other things: "While the English ships were built to withstand the high sea, the German ships were only made for a short 'tip and run' trip in the North Sea and then spent the balance of the time in harbor. There the men do not remain on board but go into barracks and only use the ship as practice ground. The result of this was the demoralization whose result we are familiar with." How many misrepresentations. This admiral does not appear to be familiar either with the foreign trips of our ships in peace times nor with the accomplishments of our cruisers in all waters under the difficult conditions engendered by the war. He also is apparently ignorant of the indefatigable peace labors of the German Fleet which did not even permit the crew to have shore leave on Sundays during the principal maneuver periods, and he is also ignorant of the nerve-wracking sentry service of the German squadron during the war, which only permitted short periods of rest in harbor, during which only a portion of the married men were allowed to sleep on shore. If Admiral Tudor seeks the grounds for the demoralization which was to blame for the downfall of our fleet, then he should question his own countryman, Lord Northcliffe, who can rest on his laurels.

Time of Construction.

The English builder lays especial emphasis on the fact that Germany was not in a position to compete with England in the rapidity of the construction of a ship. She required in general from 3 to 4 years against the 2 to 3 years required by England. The conditions were the same with the small cruisers.

This lapidary statement is indeed effective but misleading in as much as it gives an oblique picture of the average length of time required for construction in the two countries. Through the four figures given by the speaker the impression is aroused that the construction time bore the average relation of $3\frac{1}{2}$ to $2\frac{1}{2}$ and was 40 per cent longer in Germany than in England. This is not so.

It is true that during peace time England had constructed a couple of type ships as record constructions in a remarkably short period of time in order to make the results utilizable for the subsequent constructions at as early a date as possible 1906,) *Dreadnought*, and 1914, *Caroline*). Also during the war a number of English constructions were built with urgent precipitancy (1915 to 1916, *Repulse*, *Renown*, *Courageous*, and *Glorious*, as well as several small cruisers of the C

class). The enormously short period of time in which the five above-named large ships were built represents especially a brilliant technical performance even if there are certain deficiencies to be found, such as an overweight (*Dreadnought*), weakness of the stringers (*Renown* and *Courageous*), and like defects which could perhaps have been avoided if the work had not been unduly hastened. It must be acknowledged that not only Germany but all the other sea powers could not have constructed single ships in such short periods of time such as England is in a position to do through the routine of its ship-building and machine industries, and through the exceptionally favorable position of its yards with respect to the rolling mills, etc. The average building period of all ships, however, will only be decreased very immaterially through these single performances.

During peace times the German Navy renounced all record constructions as a matter of principle because its limited means and the small number of its new constructions did not permit either the increased expense attached to every immoderately hurried construction nor the risk of producing faulty constructions. Only the two cruisers, *Brummer* and *Bremse*, that were destined for especially urgent purposes, were designed and built during the war in 16 or 19 months with the utmost dispatch. In contrast thereto the advancement of the construction of our other large ships suffered through the increasing lack of materials and the growing scarcity of laborers in connection with the hastening of submarine construction, so that it took a much longer time for the constructions built after 1915, which in the case of the battle cruisers *Lutzow* and *Hindenburg* amounted to a period one-third longer than usual.

A perfectly fair comparison of the constructive periods must extend from the letting of the contract up to the finished production, all ready for the trial trip. Unfortunately we are not in possession of creditable statistics concerning the time of the building contracts for the major part of the newest English constructions. Jane only furnishes data concerning the laying of the keel and the completion, so that only this part of the entire building period will be considered. The ships constructed under normal peace conditions and those in the first year of the war must be differentiated from those built later, whose construction during the war was either abnormally delayed or hurried.

The preliminary work from the time of the contract to the laying of the keel took, in the case of the large German battleships, 6 to 8 months on an average and $5\frac{1}{2}$ to 6 months in the case of the small cruisers. If one gauges the preparatory work in the case of the newer English constructions at 4 months as an average by making allowance for the more favorable conditions in connection with the pro-

curing of the material, etc., then the following table of comparison for the average length of construction results:

Average length of time for construction.

	Months.	
	Germany.	England.
Large line ships to 1915	32 plus 6 = 38	27½ plus 4 = 31½
Large line ships after 1915	31 plus 8 = 39	33 plus 4 = 37
Battle cruisers to 1915	29 plus 8 = 37	28½ plus 4 = 32½
Battle cruisers after 1915	41 plus 6 = 47	19½ plus 4 = 23½
Small cruisers to 1915	24 plus 5½ = 29½	20 plus 4 = 24
Small cruisers after 1915	20½ plus 6 = 26½	17 plus 4 = 21

Time of construction from laying of keel to completion.

[Given in months.]

	Class.	Number.	Maximum time.	Average time.
GERMANY.				
Large line ships ready up to middle of 1915.	Nassau to Konig	15	26 to 35	32
After middle of 1915	Baden and Bayern	2	27 and 35	31
Battle cruisers to middle 1915	Van der Tann to Derfflinger	5	25 to 32	29
After middle 1915	Lutzow and Hindenburg	2	39 and 43	41
Small cruisers to middle of 1915	Breslau to Frankfort	10	20 to 28	24
After middle 1915	Konigsberg to Coln and Brummer.	8	12 to 29	20½
ENGLAND.				
Large line ships to middle 1915	Dreadnought to Queen Elizabeth.	27	10 to 37	27½
After middle 1915	Royal Sovereign	5	28 to 46	33
Battle cruisers to middle 1915	Invincible to Tiger	9	24 to 31	28½
Renown to middle 1915	Renown	2	19 and 20	19½
Small cruisers to middle of 1915	Dartmouth to Champion	29	11 to 27	20
After middle 1915	Cambrian to Despatch	18	12 to 22	17

In normal times the average building period of the large battleships in England, including the record constructions, took at the most 4½ to 6½ months, and with the small cruisers at the most 5½ months less time than in Germany. Under the war conditions this superiority of England almost entirely disappeared in the case of the large line ships, but remained 5½ months in the case of the small cruisers. Only in the instance of the two record constructions, *Repulse* and *Renown*, did she attain one-half the length of time required for the battle cruisers *Lutzow* and *Hindenburg*, since these took 10 months longer than the normal time owing to the conditions induced by the war.

The statistics of the English builder are to be taken in the sense that England indeed performed several record constructions but that the average building time of its large battleships, including these record constructions, taken under peace conditions, was at most 15 to 20 per cent and in the case of the small cruisers at most 25 per cent shorter than those of the corresponding German classes. The differ-

ences are partially due to the more favorable conditions existing in the English shipbuilding industry and partly to the extensive detailed work which was done on the German ships.

Conclusion.

In the above article the comparison between the German and English construction of large warships, which was drawn at the spring meeting of the Institution of Naval Architects under apparent non-partisanship, has been examined from the German standpoint and unfair or incorrect assertions of our English critics have been rectified.

The development taken by the German warship construction was not only dependent on the abilities of her builders and the performances of the German industries. The naval budget, which alone furnished the possibility of guaranteeing to the German Navy an assured development, also caused restrictions in many ways which impeded the free technical development. The financial condition of the Empire and the continual effort of the Imperial Treasury to cut the demands of the Navy to fit the limits prescribed by the naval budget forced the abandonment of experiments which could result in failures of construction. Internal and external political reasons caused the creator of our fleet, Rear Admiral von Tirpitz, to avoid superseding England in the rôle of pioneer in type development. On the other hand, the secrecy with which England so successfully shrouded these things made it very difficult to follow in the path of the English Navy. In spite of these restrictions the German constructors and the German shipbuilding industry can look back with satisfaction on their work which in a few decades had reached a stage of development equal to that of the one-time "shipbuilders of the world" and in many ways superior to it. This fact can not be pushed out of the world by the speeches held on March 16 before the Institution of Naval Architects.

NEW BRITISH BATTLESHIPS—PARTICULARS THEREOF.

Source: Reliable.

30 July, 1921.

There is very little definitely known as to the particular type of new battleship planned by the British Admiralty. However, I understand on reliable authority that these ships will be improved *Queen Elizabeths*, that their speed will be 28 knots, that their armament will consist of twelve 16-inch guns, and that their broadside battery will be composed of twin 6-inch mounts.

It is understood that the twelve 16-inch guns are to be mounted in four turrets of three guns each.

REPORT OF LATEST TYPE HIGH SPEED DIESEL ENGINE BUILT BY GERMANY IN 1918.

Source: Lieut. Commander William H. Pashley, U. S. N.

(14759)

5 Aug., 1921.

Recently an American citizen, Harry Young, 105 Hempstead Grove, Long Island, addressed a letter to the commandant stating that he had information regarding the latest German Diesel engine practice and desired that he might have the opportunity of conversing with the officials of the yard on this subject. This letter was referred to me and an appointment made with Mr. Young, who furnished the following information.

Mr. Young was born in Switzerland and educated in Germany. He spent one year at the University of Bonn and two years in Hamburg in the high school for shipbuilding and engineering. From there he went to the Vulcan Werft in Hamburg where he remained from 1914 to 1918. During the war he was commissioned a lieutenant in the German Army. He remained at work in the Vulcan Werft. After the armistice he left Germany, came to this country, entered the United States Army June 14, 1920, and was put in charge of the armament department at Langley Field, Va., having charge of aircraft guns, high explosives, bombs, aircraft sights, etc. He produced a letter signed by Capt. (A. S.) John J. Devery, U. S. A., in which his services were most highly recommended. He became an American citizen on June 6, 1921. He also gave as a reference an Army officer by the name of Moser, rank unknown, who, he stated, was a chief engineer in the armament department of the Army Air Service in Washington, D. C.

He states that the Germans started construction of an aluminum steel engine burning a heavier fuel than gas oil about February 12, 1918, and that at the same time they started the construction of a dreadnaught submarine designated UPK.

The length of this boat was 210 meters, beam 9.75 meters, draft unknown; crew, 105 men; armament, four 150-millimeter guns, rapid fire; 6 torpedo tubes, 2 bow, 2 stern, and 2 beam; ammunition carried, 5,000 rounds per gun, and 48 torpedoes; range of torpedoes about 6 or 7 miles; range of guns, 21,000 meters. The vessel had one periscope, 27 meters long, with 2 heads. Periscope was tapered in accordance with the usual German practice. Vessel had an elliptical conning tower, radio, and folding U-boat type of radio mast. Ballast tanks were outside tanks, and main tanks were divided into 15 sections per tank. The motive power consisted of four 1,800 horsepower oil engines on four shafts, below decks, and two 600-horsepower Mercedes engines on deck, driving air propellers. The four Diesel motors in the hull had a speed of 750 revolutions per minute, and were built of

aluminum steel and ran from 150 revolutions per minute to 750 revolutions per minute without vibration. The crank shaft of these motors was of Krupp nickel steel. The high and speed power of these motors was made possible by the invention of Prof. Loffler, of Hamburg, who devised a system of cooling the pistons, heads, and cylinders by compressed air at a pressure of 75 kilos per square centimeter. Air was returned to compressors, thence through coolers, and thence back to engine. The engines were reported to have been built in eight cylinders and to weigh $3\frac{1}{4}$ kilos per horsepower. Bore of cylinders was reported to be 37 centimeters, stroke unknown, but greater than bore. Crank shaft was 22 centimeters (?), 8 centimeter hole drilled through shaft for lightness and lubrication; shaft in one piece with no counterweights. The air compressor is in the middle of the engine, there being four cylinders on either side of compressor. Compressor is 6-stage, 2-compressor cranks. Air starting pressure about 35 kilos (?) per square centimeter. Pistons of aluminum steel, six rings, three of which are wipers. Engine base and housing strengthened with nickel steel tie-rods. Vessel has six auxiliary air compressors. Engines were connected to motors with single cone clutch, faced with leather, which is supposed to be rhinoceros hide. The engine had no other flywheel.

The main motors were of special design built by Siemans-Schuckert Works of Cologne. Mr. Young did not know anything about the storage batteries, except that they were reported to be of a new type.

The hull was built of nickel steel, 40 millimeters thick and well braced.

The engines on deck were placed one forward and one aft, driving air propellers with 4 blades which were 9 feet 6 inches in diameter. One of these wheels pulled and the other pushed. The surface speed of the vessel was reported to be more than 50 knots and the submerged speed about 9 knots. The bow of the boat was fitted with electric arc net cutters. These net cutters on test burned a rod 150 millimeters in diameter in 0.012 seconds.

The boats were ready for trial on October 18, 1918, and tested, propellers were then changed and a speed of 54 knots obtained on the surface. There was a hydraulically operated housing rising out of the hull incasing the deck motors, preparatory to submerging. Under deck motors alone the boat was reported to be able to make about 37 knots.

One or two days before the armistice 14 of these boats left Helgoland and were reported to have been sold to Japan. At any rate they did not return.

The above is submitted to the commandant with recommendation that it be forwarded to the department for investigation of references furnished by Mr. Young. The submarine described by him is be-

lieved to be beyond anything ever contemplated. Were it not for the fact that the references given were those of United States Army officers, no credence whatsoever would be placed in the story. Mr. Young claims that if the Government will place him in Germany on an American ship he can in a few weeks secure all plans of the engines and hull of the vessel described, provided that he can place these plans on board an American vessel in a German port. He claims that there is no other way to get these plans out of Germany, as they are very carefully guarded.

FRENCH 45-CM. NAVAL GUN.

Source: Reliable.

25 July, 1921.

It has been known for some time that the French had decided on the construction of a 45-centimeter gun as the largest caliber for battleships. The following is the translation of a report:

The caliber of the gun was determined by the effect that its projectile must produce.

Now, what are the teachings of the battle of Jutland?

(*a*) The English projectiles with a comparatively large explosive charge, but insufficiently strong, detonated prematurely and did not cause destructive effect in the interior of the ships which they hit. More than 4,000 projectiles (12, 13½, and 15 inches) were fired on the German Fleet, and not a single ship was sunk as a result.

Immediately following the battle the English recognized this inferiority, and during the war they set about replacing their ammunition supply by substituting armor-piercing shot for the armor-piercing shell.

2. *It is thus certain that the projectile for the major caliber artillery must be an armor-piercing shot.*

(*b*) The German projectiles were armor-piercing shot. As a matter of fact, from the point of view of perforating armor they behaved well and gave good bursts in the interior of the ships they hit. But all the reports agree on this point: The effect of these projectiles was local. If exception is made of the cases of the ships blown up by the explosion in the magazines, all the English battleships or battle cruisers were able to regain their port. Some of these ships had been hit as many as 30 times by major caliber projectiles, and in the month following the combat they were again ready for sea.

3. Why did the German projectiles prove to be so ineffective? It is because their caliber did not exceed 30 centimeters. In order that the projectile should burst in the interior of the ship it is necessary that it should be of an armor-piercing shot type, and in order that it produce the desired effect it is necessary that it should have a large capacity for the bursting charge. These two conditions can only be realized by using a very large caliber projectile.

4. After the battle of Jutland the Germans recognized this, since they replaced the 28-centimeter guns of the *Seidlitz* by 30-centimeter guns.

5. The battle of Jutland has consequently furnished the two following lessons: It is necessary to fire at the longest possible range with the greatest possible caliber.

6. In order to realize a gun satisfying these conditions, it is necessary to take into consideration the factory conditions in France. These conditions limit the construction of a gun exceeding 21 meters in length. It is consequently necessary that the resulting product obtained by multiplying the caliber by the length in calibers does not exceed 21. Now in order to have a long range a high velocity is required. In order to have velocity it is necessary to have a fairly long gun. In adopting the length of the existing major caliber gun, i. e., 45 calibers, it is found that the caliber can be fixed at $\frac{21}{0.45}$ or 45 centimeters.

Normal Pressure.

7. Other things being equal, the muzzle velocity will be higher as the normal pressure in the gun is higher. The normal pressure actually used in our guns is not quite 3,000 kilograms per square centimeter. By the use of autofrettage it can be hoped to increase this to 4,000 kilograms. For guns of very large caliber, it is more prudent, however, to set a limit of 3,500 kilograms.

Powder.

8. While it is likely that the nitroglycerine powder will be later adopted, this will only be the case after considerable study and experiments. Without waiting for the completion of these studies, and in order to complete the construction of this 45 centimeter gun as rapidly as possible, it is necessary to anticipate the use of a type of B powder (nitrocellulose) much slower than the powder used at present.

Weight of Projectile.

9. In order to have an effective projectile, a fairly high $\frac{W}{d^3}$ will be adopted, without exceeding the limits at present set in France. $\frac{W}{d^3}$ will be equal to about 15, whence the weight of the projectile will be around 1,400 kilograms.

Other Characteristics of the Gun.

$$\text{Ratio } \frac{\text{diameter powder chamber}}{\text{diameter of bore}} = 1.3$$

$$\text{Density of loading} = 0.6$$

$$\text{Ratio } \frac{\text{total volume bore}}{\text{volume powder chamber}} = 4$$

10. As the result of the above figures the muzzle velocity works out to be about 875 meters, and the maximum range 47 kilometers.

11. Consequently, to sum up, the commission fixed the following principal characteristics for this gun:

Caliber	=45 centimeters.
Length in caliber	=45.
Normal pressure	=3,500 kilograms.
Powder	=Nitrocellulose "B ' powder.
$\frac{W}{d^3}$	=15.
Muzzle velocity	=about 875 meters.

DATA OBTAINED FROM A GLANCE AT A PLAN OF A JAPANESE SUBMARINE.

(6452–D)

Source: Reliable.

4 August, 1921.

1. Recently, I had a glimpse of a main motor ventilation plan of a submarine being designed by Vickers & Co. (Ltd.), Barrow, for the Japanese Navy. The following information was obtained with regard to this design:

(*a*) The general characteristics of the vessel are similar to the British L–50 class. This applies particularly to the hull, hull fittings, and general arrangements.

(*b*) The battery contains the same number of cells (330) as is contained in the L–50 class, but the battery is installed in two battery compartments instead of three, as in the L–50 class.

(*c*) The armament consists of six bow torpedo tubes (probably 21-inch) and two guns (probably 4-inch) mounted on the bridge deck level. One of these guns is mounted forward of the conning tower and one of them abaft the conning tower. An access hatch is fitted for each gun, this access hatch being similar to the access hatch on the L–50 class. These access hatches are also used for natural ventilation purposes in connection with the ventilation system of the boat.

(*d*) The exhaust ventilation system consists of two leads beginning abaft the main motor armatures, thence upward through the strength hull and forward between the strength hull and the outer hull to the forward compartment, where it enters the strength hull. The diameter of the pipe leads is 15 inches, there being one lead from each main motor. These leads on the outside of the pressure hull are pressure-proof pipes. This exhaust system is apparently installed primarily for ventilation of the main motors under submerged conditions, the air being exhausted from abaft the main motors and coming back into the boat in the forward compartments.

(*e*) The supply ventilation consists of leads which supply air to the main motor armatures, the air being drawn in through the access hatches leading to the 4-inch guns under surface conditions, or being drawn in from the compartments beneath the 4-inch guns under submerged conditions. The only novel feature in connection with the supply ventilation is the fact that brine-cooling coils are installed and the supply air is drawn through these cooling coils before it is supplied to the motors. The cooling system appears to be the ordinary brine-cooling system.

(*f*) No broadside torpedo tubes and no stern torpedo tubes are installed. So far as could be seen from this plan no mine-laying installation is being fitted.

(*g*) No definite information is available relative to the number of submarines the Japanese propose to build to these plans, but it is believed that they contemplate building a number to this design, which submarines will be built in Japan. Vickers & Co. are very hard up for work, and are doing everything practicable to obtain actual construction work from the Japanese.

ANGLO-GERMAN RELATIONS.

Source: Reliable.

(14574–C)

18 July, 1921.

It is interesting to note that the prediction is often heard among Englishmen that it will not be many years before the United Kingdom and Germany will effect an entente which will be mutually beneficial and lead to closer commercial relations between the two countries. It has always been a tenet of British foreign policy that ententes or alliances should be made with the strongest powers, and it is unquestioned that the Prime Minister, Mr. Lloyd-George has either had this in mind himself or has been inspired to it by influential advisers. This has been long suspected in France and to this suspicion is due much of the irritation which has cropped up in Anglo-Franco relations. Through the insistence of France upon certain retaliation matters England has been forced into the position of defending Germany, and while it would not be fair to say that England is defending Germany, the English Government is possessed of a keen sense of justice, and also realizes that if conditions in Europe are to be restored to the mutual advantage of all countries concerned, that the United Kingdom and Germany must come together in a friendly and mutually helpful way. It is also known that the British Government is not desirous of so alienating Germany as to drive that country into other alliances, notably a possible alliance with Japan and Russia or an understanding with the United States, which would militate against British interest, both materially and politically.

ANGLO-JAPANESE NAVAL COMBINE AGAINST UNITED STATES IN PACIFIC ADVOCATED.

Source: Reliable.

(7502-A)

13 July, 1921.

Discussing the relations of the Japanese, English, and American Navies in the Pacific, the Nichi Nichi comes to the conclusion that the balance of power in this part of the world can only be maintained by Japan and England on one hand and America on the other.

"Japan and America have vital interests in the Pacific," says the journal. "It is these two countries which are disputing the dominance of the ocean. The naval strength of England in the Pacific is almost insignificant as compared with that of Japan and America. It is because of the realization of the position of England in this part of the world that Admiral Jellicoe advocated the establishment of a strong Far Eastern fleet.

"It is unthinkable for various reasons that the Japanese and English Navies should be opposed to each other. The cooperation of England and America in the Pacific means the concerted action of America and the British dominions. It is not likely that England would agree to Australia, for instance, taking joint action against Japan. There is not the least ground for thinking that England likes to see Australia on close terms with America. In fact, England is against the idea of Australia being Americanized.

"Moreover, there is every reason to believe that England does not welcome the dominant position of America in the southern part of the Pacific. The explanation is that the ascendancy of America in the South Seas would lead to the impairment of English interests there. It would also mean the cutting off of English trade from the Chinese and Siberian market.

"These considerations, coupled with the fact that England must keep a close watch over India, points to the impossibility of the cooperation of the English and American Navies in the Pacific, and to the necessity of England taking joint action with Japan if she wishes to defend her fundamental interests in the East. England's cooperation with us in the Pacific and in the Indian Sea will be the natural outcome of the situation now existing in the Far East."

ARGENTINE NAVAL POLICY.

Source: Reliable.

(14031)

30 June, 1921.

Argentina has enjoyed peace for may years and has no distinct popular feeling of resentment against any country. There is but little of interest evinced in increase of the Navy, or in any possible

employment of naval force. Naval ambitions are confined to the naval officers, who, realizing that large appropriations can not be obtained from Congress, express their hope of seeing the Navy a fighting unit, small but well-rounded at that, and sufficient to preserve esprit of the naval forces.

The thought is expressed in a bill which has been before Congress for two years. It is probable that the bill will never pass, for the officers returning from duty with the United States Navy have succeeded in modifying the line of naval thought in several essential particulars.

The bill prescribes 4 fast cruisers, 8 destroyers, 20 submarines, 50 airplanes, 3 dirigibles, and a number of auxiliary vessels, together with increase of shore bases.

The advanced thought modifies this to an increase of 2 battleships, 25 destroyers, and an air force. If submarines are obtained at all, they want some 30 or more. (See Admiral Lagos's address before the Instituto Popular; Rep. 157 of June 13, 1921.)

Careful consideration has been given to the subject of wars with Chili and with Brazil; and the plan calls for an immediate attack on the enemy. Blockade, or semi-blockade, they say, means obliteration of revenue from crops and herds and deprovation of coal and iron; hence, loss of the war. Defensive plans seem to have been relegated to minor importance for the above reason; and this may account for the lack of mines for the protection of Buenos Aires and Bahia Blanca, and to the failure to modernize the defensive batteries of Puerto Militar. Nevertheless, the presence of submarines in the Chilean Navy has thrown the offensive plan against Chili into confusion; and officers have stated that the Argentine Fleet must remain at Puerto Militar and trust to powerful neutrals, like England and the United States, to make Chili very lenient in blockading or in allowing blockade runners.

Capt. Segundo R. Storni, an able officer of the Navy, has written a book on Argentina's Interests at Sea, in which he shows the necessity of having a large merchant marine if Argentina is ambitious to become a first-class power; and then the geographical and commerce protection features of Argentina, and the necessity of a primary operating base at Samborombón, a secondary base at Veseado, minor bases at Bahia Blanca, Madryn, Gallegos, and Thetis, with defended harbors of refuge at Mar del Plata, Quequén, San Blás, Cape Dos Bahias, Comodoro Rivadavia, and San Julián, together with railway lines permitting quick troop movements and supply support to the bases. The importance of Argentina obtaining the Falkland Islands is also brought out.

In support of an adequate naval force, the following points of friction that might become acute are noted by Argentine officers:

(1) Discontent of Argentine over the settlement of the Chilean boundary, whereby Chili was awarded such portions of Tierra del Fuego and Patagonia as to give her all of the Magellan Straits, with outlets on the Atlantic. (This discontent is not general, it having long since been forgotten.)

(2) Contempt for Brazil and intolerance and lack of consideration of the Argentine people for any policy or action taken by Brazil.

(3) The coming-in of extensive oil fields along the Bolivian-Argentine-Paraguay border line, and friction to be expected in their development.

(4) Experience brought home by the recent war showing that world wars involve all neutrals.

A South American war is a most remote possibility so far as real cause is concerned. Nevertheless, any insult, real or fancied, to the country, would be sufficient to turn the passionately patriotic Argentine Nation into a hornet's nest.

CONDITIONS IN MUKDEN.

Source: Reliable. **5 July, 1921.**

1. Expedition to Urga.

It is reported here in high military circles that Governor Chang will send the whole of his 28th Division to Urga and that this division will be supplemented by a few mixed brigades. Some of the 28th Division are already in Kalgan, and the commander of this division will be appointed to Jehol but will probably proceed to Urga.

Governor Chang is reported to have said that he himself will proceed to Urga and will take charge of the whole expedition, but I think this is very unlikely. He knows that many people would like to assassinate him and that his situation in the field would be too dangerous. He would also be too far from his political and military headquarters, and the situation in Mukden and Peking might get out of hand during his absence.

2. Attitude of Chinese in the Event of a United States-Japanese War.

The progressive Chinese in this region are hoping for a war between Japan and the United States and many of them would be very pleased to take sides with America. It is probable, also, that a large number of Koreans would at the same time strike for their independence. The Koreans have what may be called a National Guard consisting of more than 20,000 men and they are said to be very active. It is reported that they have some sort of understanding with the Far Eastern Republic so that joint action may be taken against the Japanese if opportunity offers.

3. Anti-American Feeling of Japanese in Manchuria.

A number of Japanese subsidized papers in Manchuria continue to attack the United States, and some of them have recently said that if Japan is to accomplish her mission in the Far East she should strike at once, as the chances of success are greater now than they will be later.

TRANSLATION OF ARTICLE BY GENERAL K. SATO.

Source: Reliable.

(11399-F.)

29 July, 1921.

The following is the gist of an article written by General K. Sato, a translation of which was printed in the Japan Advertiser of July 26, 1921:

National morals, except in Japan, does not seem to have advanced so far as individual morals.

When Korea was invaded, about 250 A. D., the Japanese troops treated the Koreans with great humanity. Even the enemy captives were not harmed.

When Korea was again invaded, about 1600 A. D., the enemy were again treated with every civility.

Since Japan took her place in the comity of nations they have ever been faithful to the principles of international law—many times foolishly honest in her adherence to these principles. During the Chinese-Japanese War the principles of international law were carefully observed, but the people of America and Europe manufactured a story of a massacre of Chinese at Port Arthur. They said that the Japanese utterly ignored all the rules of international morality. The Japanese took no booty or loot, not one private individual took anything. The homes of German officers contain loot collected by them in Paris and Peking. They exhibited these articles quite frankly after the fighting was over at the time of the Boxer trouble, in which Japan reluctantly took part, and where she bore the brunt of the fighting; the Japanese were simple and honest hearted and gave up the physical possession of the Kaiping coal mine, which was eventually acquired by Great Britain. In the grabbing of concessions in Peking and Tientsin Europe and America have taken the most important and finest places. Not only did the European and American armies loot, but the nations took all they could get from China. After the Russo-Japanese war there were some points in the Japanese policy towards China that might have been criticized from the standpoint of international morality.

The military authorities in Japan to-day believe that Japan has been too foolishly simple-hearted in her treatment of China since the Boxer affair. This is much to be regretted. It is due to the bad example set us by Europe and America.

As for the 21 demands, they are in strict accordance with the problems which grew out of conditions as they were left in the treaty of peace between Russia and Japan.

The policy of the Powers toward China was, up to 1913–14, only a race for concessions, privileges, and spheres of influence. The common meeting point was the division of Chinese territory. To-day the powers are endeavoring to get preferential economic rights for themselves. They describe the putting forth of their strength in this way as *economic expansion*, but the real phrase should be *capitalistic imperialism*.

Germany entirely disregarded international morality in the late great war. The Allies were superior to the Germanic culture during the war, but their demands at the Peace Conference were too severe and wrong from the standpoint of international morality.

The behavior of America toward the League of Nations was certainly wrong and completely ignored international morality.

The individual morality of the Japanese is superior to that of the Americans and Europeans.

When the ports of Japan were opened, the Japanese people were greatly frightened and have not yet shaken off this feeling of fear.

The world to-day is the white man's world. Five hundred and eighty million whites oppress 1,120,000,000 colored peoples.

A careful glance around the world will easily show that the golden age of international morality has not yet come.

ATTITUDE OF JAPAN ON WASHINGTON CONFERENCE.

Source: Vernacular Press and Statements of Public Men.

(14746)

29 July, 1921.

Japan's readiness to accept the invitation to attend the conference is mixed with a great deal of caution and some grave misgivings. Japan enters the conference reluctantly, not caring to face the consequences of refusal. The Japanese Government is fully prepared to enter a conference with England and America on the subject of disarmament, but was not expecting President Harding to extend an invitation to France, Italy, and China, nor to extend the scope of the conference discussion to include the Far East and the Pacific.

The vernacular press of 14 July gives practically unanimous welcome to the invitation, but generally expresses doubt as to the motives for, or the advisability of, placing the whole Pacific situation before the conference.

If the United States, England, Australia, and France continue the practice of racial discrimination against Japanese and simultaneously demand the open door and equal opportunity in China and the Far East, Japan must give the question long and careful consideration before she agrees to participate in the proposed conference. If, however, the other powers intend to remove the existing limitations on Japanese principle and apply the open door principle to all the world and recognize equality of the Japanese people and government with the peoples and governments of the world, then the invitation should not be rejected.

Japan is counting on the nonvital interest of France and Italy, whom she considers preoccupied with European affairs.

Says United States and Great Britain already secretly agreed on issues to be discussed. Considers the concentration of the American Fleet in the Pacific must be regarded by Japan as a menace to her security.

Japan must demand a return to the present arrangement, together with a cessation of fortifications and construction of naval bases at Los Angeles, San Diego, Mare Island, Port Bremerton, Guam, Pearl Harbor, and Manila.

The invitation from President Harding will have a grave bearing on the future history of Japan. The proposal is not alone the idea of the United States; it is also

the tactful method taken by Great Britain to extricate herself from some of her Far Eastern entanglements, at the same time working to keep Japan and the United States from increasing their navies. A most difficult question is thus created for the Japanese Government, but at present there seems no choice but to accept the invitation and if necessary pledge the nation to reduction of armaments, both on land and sea, at the coming conference.

The feeling of isolation finds expression in many editorials and interviews with prominent men. It is generally felt that Great Britain, Japan's ally, will be closer to America than to Japan at the conference, while France and Italy may be counted on to support the views of America. In the discussion of Pacific questions, Japan fears that she will be on the defensive. The bulk of Japanese opinion, official and private alike, regards the conference with trepidation and the feeling that Japan must play a lone hand.

Japan is ready now to join in any practicable arrangement for the reduction of armaments. She feels, however, that it is necessary that everything should go into a conference on Far Eastern questions. Has vital interests at stake and many important questions are still unsolved and the conference must deal with all matters now open between Pacific countries. This raises the question of emigration, for if the open door and equality of opportunity are to be postulated, they can not be restricted to certain Pacific countries and withheld from others. Among such unsolved matters are the rights of the Japanese in the southern Pacific islands under the mandates of Australia and New Zealand, the American claims in regard to Yap, and the discrimination exercised against Japanese producers in French Indo-China, etc.

The attitude of America toward the League of Nations furnishes strong reason for challenging the position of President Harding in initiating the Washington Conference. America takes special pride in talking of Justice and equality, but her acts give the lie to her protestations.

President Harding can not discard the League of Nations and initiate disarmament without eliciting criticism about his real intentions.

So long as America concentrates on strengthening the fortifications of the Philippines and Guam, she will find the world unwilling to follow her leadership in disarmament. A movement for reduction of armaments will fail unless internal relations are rearranged to secure lasting peace.

Japan, before joining the conference, must consider the effect of the decisions reached there on the future position of Japan. It will be almost impossible to reduce existing armaments, but means may be found for reducing future programs of naval construction, if the nations are sincere in their desire to see world peace established on a firm footing. Peace in the Pacific is menaced by naval competition between Japan and the United States.

Sincerity and friendly spirit are the only essentials for the successful completion of the great task in the interests of the world's peace, and it is earnestly hoped that this will be borne in mind by the countries concerned.—(*Jiji.*)

A reduction of armaments is being demanded by all peoples, irrespective of nationality and race. We can not but sincerely welcome the proposed conference. Above all Japan is a poor country and is suffering from an excessive burden—she should therefore make the utmost efforts for success of the conference.—(*Tokyo Asahi.*)

The proposals for disarmament and for an agreement regarding Pacific problems are essential for the peace of the world and the promotion of civilization. Their realization is a common desire of all mankind. President Harding acted wisely and opportunely in pointing out in his note the close relation between the disarmament question and the Pacific and Far Eastern problems, and in urging the necessity of the countries interested getting together to establish a common agreement regarding principles and policies in the Far East. No one can deny that China is sufficiently qualified to attend the conference.—(*Tokyo Nichi Nichi*, 13 July.)

The Japanese heartily congratulate themselves on the convocation of the conference in the interests of world peace and the welfare of mankind, and tenders its respects to the American President and the British Government who initiated and induced the move. In regard to disarmament, there are many difficulties and Japan is subject to many disadvantages. But it is necessary that Japan should reduce, even alone. The conference is initiated by America, which has the largest navy, and disarmament is to be effected in proportion. Japan has the closest interest in Far Eastern question, but no one can object to China participating. But relations between Japan and China being what they are, will not this conference be like that at Paris? The memory of the Japanese failure there is still fresh.—(*Yomiuri*, 13 July.)

A proposal for disarmament is welcomed in principle—a naval agreement between Japan, Great Britain, and America. An essential preliminary is the question of the sincerity and determination of America. The greater part of to-day's international complications are due to America's fickleness at the Peace Conference. President Wilson was an idealist, President Harding is a materialist. We are opposed to Japan and the Powers being fooled by America.—(*Kokumin*, 13 July.)

It is worthy of great attention that President Harding points out the close relation between disarmament and Pacific and Far Eastern problems, and has invited China, as well as Japan, Great Britain, France, and Italy, to the conference.—(*Chugai Shogyo*, 13 July.)

The recent interview of the Japanese Minister of War may may have increased doubts regarding the sincerity of the Japanese Government toward disarmament. So far as Japan is concerned, military disarmament is even more important than naval disarmament. Since the American proposal is not confined to naval armaments, but also refers to military armaments, the Japanese Government should take the initiative in advocating a limitation of military armaments, and let us urge the authorities to make their utmost endeavors for this purpose.—(*Hochi*, 13 July.)

The center of the matter is China. The proceedings of the conference should be open and aboveboard, free from jealousies, suspicions, and fears, but in strict accordance with the world peace and the welfare of mankind. If the Conference should act with unkindness and with the intention of restraining some party, it will be difficult to obtain satisfactory results.—(*Yamato*, 13 July.)

The Japanese Government and people are heartily in favor of disarmament, but we must be careful to avoid the possibility of a conference called to discuss means of lightening our burdens proving futile or terminating in a disagreement.—(*Viscount Takahashi, Minister of Finance.*)

Viscount Takahashi further states:

Much of the misunderstanding in regard to Pacific problems is inevitable, but there is a great deal intentionally inspired with sinister motives. America, England, and Japan must clear up all points at issue—all misunderstandings—*before* the conference convenes.

The views of the Privy Council regarding the conference are not optimistic. It approves unconditionally of the idea of such a conference, but insists on an explanation of the nature and scope of the problems of the Pacific which are to be taken up at the conference before committing Japan definitely in the matter. The Privy Council also wishes enlightenment on the motives that prompted the American Government to include Far Eastern problems in the discussion.

It would be rash to conclude for appearances that the conference is designed merely to reach a general understanding on limitation of armaments.

The inclusion of the discussion of Far Eastern affairs indicates the cooperation of America and England in an attempt to settle international questions in a manner favorable to them.

EXPLOSION ON BOARD "KIRISHIMA."

Source: Reliable.

(1463-A)

29 July, 1921.

An explosion took place in the heavy oil storage compartment on board the battle cruiser *Kirishima* on the 13th of July while in Sayegi Bay, Oita Prefecture, on the way back from the celebration of the third memorial service for the sinking of the warship *Kawachi* in Tokuyama.

According to the Osaka Mainichi a fire broke out in the engine room of the warship, which spread to the oil storage depot. It bursted with a terrible explosion, filling the ship with flames. The fire was subdued after a few hours, during which time all the crew members were engaged in fighting the flames. The cause and the amount of damage are kept secret, and the ship, being unable to operate, is docked at Kure for repair.

JAPANESE POLITICAL CONDITIONS.

Source: Reliable.

19 July, 1921.

The letter quoted below will probably be of some interest, considering that its writer is a member of the Japanese nobility and a man who knows the Occidental Civilization as is attested by his knowledge of English.

The letter follows:

Thank you very much for your letter and for having forwarded the clipping to Gohier. I saw it reproduced in his magazine.

Thank you also for the booklets and the clippings. I was just going to write to Paris for the French edition of the Protocols and so was very glad to get it. I have given a copy of the English version, which was at last forwarded from London through the Embassy, to the special library of Political Sciences of the Tokio University; they did not have it and were very pleased.

I suppose you are always as busy. Please let me have a line when you can spare a minute to dictate to Miss Lefèvre. I have not seen Mr. Matsuoka since some time. He was, I hear, not very well and took a congé. I went to his office a week ago but just missed him.

Public opinion in Japan is very favorably greeting the Republican administration and we hope that the alien question will come to some headway before long. In fact, I do not know if this question is not a more important one for you than for us, as the existing legislation—or rather that before the new Californian law—was about as hard on the Japanese emigrants as the present one. The very interesting point is the question of a general alien land law and immigration law. Public opinion would be extremely badly impressed by a law too ostensibly made against the Japanese, and it certainly would do an immense amount of harm to the relations with America. Remember that even with the existing Californian legislation, the most severe crisis will be passed for us in half a score years hence, when the Japanese children will be full-fledged American citizens. Don't give Japan the impression that you are walking on her toes wilfully. That never does any good. We know something of that.

The disarmament question is beginning to stir up public opinion here. I don't know if a great importance ought to be attached to the fact that Mr. Ozaki is beginning a campaign for the reduction of our Navy programme. His campaign will surely meet with some success as he is a good orator (and a demagogue!), but much more stress should be laid on three facts: First, that his programme caused a split in the Kenseikai party, the party leaders being against it, but a few of the important members following Ozaki; secondly, that when Ozaki presented his motion in Parliament, although he was outvoted, this was done by party politics and very few personal opinions came to light, those who did speak being Kenseikai and others for the motion, while there was an enormous amount of abstentions; thirdly, that the University supports reduction.

So if America really wants to go ahead and make a proposal she will probably have a good portion of Japanese public opinion to back her. But she must *really* go ahead and show that she means what she says and will put her words into practice. There are jingoes on both sides of the Ocean, and they are bound to yell but let them yell. There are sound-minded people, too. We don't want to fight America, not half, but we don't want to be whacked if somebody tries to pick a quarrel with us. And we don't want to be chasing each other round the tree till one drops.

The Hara ministry is having a very hard time now. Will it drop, won't it drop? The big question is: What is coming after? The Kenseikai leaders have been uttering very strong remarks lately. It may play them a bad turn, as the French say.

REPORTS REGARDING PURCHASE OF JAPANESE SHIPS BY GERMANY, PAYING FOR THEM WITH MERCHANDISE, BELIEVED TO BE TRUE.

Source: Reliable.

13 July, 1921.

The reports of German efforts to buy Japanese merchant ships seem to be well founded. Von Knorr recently (in June, 1921) stated that Germany is now treating with Japan for the repurchase of the ships turned over to Japan in accordance with the Versailles treaty and Japan is especially willing to negotiate on account of the severe shipping slump. Germany proposes paying in merchandise—steel, chemical products, fertilizers, etc.

He (Von Knorr), as agent for Hugo Stinnes, is negotiating with the Nippon Yusen Kaisha for the purchase of six steamers of 3,500 to 5,500 tons, at Yen 250 per ton.

REACTIONS IN JAPAN FROM THE CALL TO A DISARMAMENT CONFERENCE AT WASHINGTON.

Source: Reliable.

(14746)

29 July, 1921.

A conference on disarmament was expected and the Japanese were fully prepared to welcome it. But the suggestion to include Far Eastern affairs and Pacific problems was a complete surprise and caused great dissatisfaction and alarm.

The inclusion of France and Italy was also a surprise, and of China was a blow.

The Japanese are suspicious that Great Britain and America have a secret agreement to deprive Japan of her special interests in China.

They also believe that pressure will be brought to bear to get them out of Siberia, Shantung, and Saghalien.

The failure of the Anglo-Japanese alliance renewal marks the isolation of the country, and the Washington conference seems to threaten their existence as a great nation.

Japan went to Paris a claimant; she goes to Washington a defendant. The world has placed Japan "on the mat."

This is the popular conception of the new state of affairs.

The inquiries were received in Tokyo with consternation. The whole nation suffered from an attack of nerves brought on by surprise and suspicion and a bad conscience.

The whole press indulged in accusations against America and Great Britain. These outcries were the outward expression of anger and fear. Japan hates to go to the conference, but is afraid to stay away. She dreads the testimony that China will give against her,

and the first-hand knowledge that the American Siberian Expeditionary force acquired in Siberia as to Japanese military arrogance and domination in a country with which Japan was not at war.

After about 10 days of hysterical alarm and anger the Japanese finally realized that they had made a very mortifying exhibition of themselves without having ever been threatened or attacked.

They are now greatly chagrined and at a loss how to account for and excuse their childish and undignified behavior.

Rather than have Shantung, Yap, and Siberian evacuation come up before the conference, it seems most likely that Japan will take pains to settle them all before the conference meets.

U. S.-JAPANESE RELATIONS.

Source: Reliable.

(11345-Q)

11 August, 1921.

The following is quoted from a report recently received in this office from a reliable source in Paris. The informant received this information from an intimate friend, a French engineer at the head of a French industrial concern in Yokohama which has dealings with Japanese military and naval circles.

He states that this French engineer is a man of calm judgment and considerable ability. This person has no doubt whatever that the Japanese are preparing for a struggle with the United States and they take no pains to hide it. The apex of these preparations will be reached in five years, and before that date they have no desire to force a decision. They can not keep up their preparations on the present scale for much more than five years, and therefore they will seek a decision with the United States in the period following 1926, say between 1926 and 1930. Between now and 1926 the initiative rests with the United States. After that the initiative will rest with the Japanese, and he believes that they will seek to use it.

This is the view held in naval and military circles, and conversations on the subject are quite free.

PROMINENT MEN, THEIR INFLUENCE, INTERESTS, AND LEANINGS.

Source: Reliable.

(14533)

26 July, 1921.

The most important thing in connection with prominent men is the influence certain persons entirely outside Government circles have upon public and foreign policies. Prominent among these is Sir Basil Zaharoff. This man has been the adviser to the present British

Government on matters in connection with the Greco-Turkish situation and has been largely instrumental in bringing about the Anglo-Franco oil combines. He is also believed to have financed the attempt of the ex-Emperor Karl to return to the throne of Hungary and that he intends to finance another attempt which is to be made within a few months.

Among others who have considerable influence is Sir Phillip Sassoon, who represents the international financial group.

Zaharoff's feelings toward America are not known. His first love, however, is France, and he is very strong in his advocacy of the Anglo-French entente. Phillip Sassoon is very friendly toward the United States and has a great deal of personal influence with the prime minister. The international group is working for an Anglo-American entente, in common with many other groups similarly inspired. There are very few prominent officials or those who have influence with officials in British life who do not from one cause or another favor the Anglo-American entente at the present time. Lord Northcliffe is one of the strongest advocates, and Lord Beaverbrook, owner of the Daily Express, has been more or less anti-American in the past, but his present attitude toward the Anglo-Japanese treaty has brought him, through his paper, into support of an Anglo-American alliance. The only virulent anti-American publicist of any influence in England is Horatio Bottomley, the editor of John Bull. Bottomley has little weight with the intelligent classes, but the publications for which he writes are distributed in large numbers throughout the country and reach the smaller shopkeepers and people of what would be called in England "the lower middle classes." The English edition of Who's Who contains valuable data as to all men whose names are mentioned in English public life.

NAVAL PROGRAM OF NETHERLANDS.

Source: Reliable.

(13778)

25 July, 1921.

Below is an announcement taken from the press with regard to the composition of the fleet for the defence of the Dutch Indies. The press also announces that this program has been approved in a bill which passed the Volksraad.

The accuracy of the announcement has been checked at the ministry of marine, and I am informed that the policy elaborated therein was actually decided upon last January, before Capt. Gooszen, chief of marine staff, sailed for Batavia to discuss the naval proposals with the East Indian authorities. At that time it was not considered advisable to give out any detailed information. I gather from

the present announcement that Capt. Gooszen has had considerable success in his mission, which was undertaken for the purpose of rousing interest in naval affairs in the East Indies and soliciting the cooperation of the colonies. He is expected back in Holland about the middle of August. The naval estimates were discussed in committee in the Batavian Volksraad on the 27th of June.

Referring to paragraph 12 below, it appears that experience has shown that Malays can only be employed satisfactorily as stokers and deck hands. The Dutch have tried the experiment of having some half-caste Javanese of the lower class as seamen, but this proved to be impracticable. In the new navy bill a scheme is included for training some of the more intelligent half castes as electricians, artificers, and radio operators. The plan outlined will require the approval of the Dutch Government before becoming effective.

[Telegram from the Indies recently published in Dutch press.]

1. Report of the defence commission was submitted to the Peoples council of the Netherlands East Indies on June 14th. It was accompanied by Supplementary Naval Estimates.

2. The Government desires to build a fleet in 12 years, for the East Indies, composed of:

4 cruisers,
32 submarines,
4 submarine minelayers,
1 mother ship for subs,
24 destroyers,
9 minelayers,
4 modern gunboats (1,500 tons and 3–5 guns)
Auxiliary vessels as required,

and an air fleet consisting of 72 scouting planes, 18 battle planes, 18 bombing machines.

3. As the period of 12 years is too long to make exact plans for, it is proposed to introduce a bill providing for the construction within six years of a Navy for the East Indies composed of the following:

2 cruisers (already building).
16 submarines (9 already built).
4 gunboats.
12 destroyers.
2 submarine mine layers.
9 auxiliary craft.

and the whole of the above-mentioned air fleet.

4. The money required is to be spent in equal annual amounts commencing January 1, 1922. For this a naval fund will be created amounting to 188,385,000 florins, the budget for which will be annually fixed by the ministers of marine and colonies.

Of the total sum, 160 million gulders will be spent on material for the Indies and 28½ million for the Netherlands; 18,462,000 florins will be required annually for 12 years, to be included in equal proportions in the budgets for the Indies and the Netherlands.

5. The purchase price of the material required for the second period of six years will be 255,060,000 florins, assuming that the prices are on the level of those of August, 1920. For the naval defense of the Indies it is proposed to construct a main base at Tanjong Priok (near Batavia), where the principal repair yards, etc., will be established. Other bases will be established at Sourabaya and in the Riouw archipelago in addition to a battery of medium caliber guns at Makassar (Celebes).

6. Priok will be defended by a battery of heavy guns protected by heavy armored cupolas on the island of Edam in addition to a lavish use of mines defended by a medium caliber artillery.

7. The other bases will be defended by mines likewise covered by medium artillery.

8. The cost of these works will be distributed over a period of 30 years commencing January, 1922, for which purpose a "Naval Base Fund" will be created, amounting to 99,000,000 florins, administered by the minister of colonies. The sum of 5,895,000 florins will be disbursed annually and put to the estimates for the Indies.

9. With regard to the distribution of the cost of the execution of the naval plans, the following principles have been accepted.

10. The cost of construction of the whole fleet will be annually distributed over the estimates for the Indies and the Netherlands; the working cost of that portion of the fleet destined for the Indies will be borne by the Indies, the rest by the Netherlands.

11. The cost of the equipment of the bases in Holland will be borne by the Netherlands; that of the bases of the Indies by the Indies. For the manning of the fleet in the Indies so many volunteers are required from the Indies that, on mobilization, this number, increased by the conscripts then liable for service, will suffice to man all the available craft.

12. The higher and specialist ratings will be drawn from the residents in the Indies and trained by professional staff from Holland serving in the colonies.

13. Supplementary estimates will be presented for 3,088,000 florins this year.

14. The committee of defense is unanimously of opinion that the plans proposed may be accepted and regard the fleet mentioned as being the minimum and recommend acceleration of the execution of the plans. The committee also expresses the opinion that the increase of the 1922 budget and the enhanced expenditure in subsequent years should be approved as the expenditure proposed is imperative to insure defense of the Indies.

THE NAVAL WAR, 1914–1918, NORTH SEA. (FROM THE GERMAN NAVAL STAFF HISTORY.)

[The first installment of this translation appeared in the Monthly Information Bulletin of 15 January.]

Chapter 6.

The appearance of heavy English forces off the German outpost lines on August 28 gave great ground for the hope that with this new phase of English war direction at sea, a closer blockade, or at least a more offensive activity of the English forces, would be ushered in. This hope, however, very soon turned out to be deceptive, and the uncertainty of where in the wide North Sea there might be a possibility of getting at an enemy apparently on the strictest defensive, remained the same as heretofore. Neither U-boat raids nor cruiser and torpedo-boat attacks were able to illuminate the darkness which as before concealed the bases and conduct of the British fleet. Only as much was believed or supposed to be established in that the first fleet, perhaps also the second, was staying far to northward, away from any attack of our light forces, and that at times it cruised on the west coast of Norway off Stavanger and Aalesund and that powerful masses of destroyers protected the east coast against attack, and probably there was a constant blockade line in the direction of Stavanger toward the Scottish coast. Further, it was believed on the ground of some few U-boat observations that a patrol of the Skagerrak by cruisers and torpedo boats could be assumed; however,

the only protection line which had actually been established by our own scouting forces was an outpost line of destroyers off the Channel in the direction of Yarmouth to Haaks Lightship, which apparently being laid out only at night was replaced by U-boats in the daytime.

Not until after the end of the war did the darkness lighten by which the German fleet command had the knowledge of enemy operations made so extraordinarily difficult, and this was done by the then in supreme command of the "Grand Fleet," Admiral Viscount Jellicoe of Scapa, who in his book "The Grand Fleet, 1914–1916" gave information concerning its creation, development, and deeds. As a consequence we can now follow the activity of the enemy fleet almost day for day during the first two years of the war according to the statements made by him. This knowledge, hitherto concealed from us, is, however, sufficient, looking back over our own measures and suppositions to test them for correctness and to complete the picture of the events.

By way of introduction Jellicoe firmly states that the premobilization of the fleet thanks to the purposeful conduct of the Minister of the Navy and the First Sea Lord, was maintained until the period of strained relations with only a few limiting measures and therefore at the outbreak of war the deployment of the English forces was already completed. In this war inestimable advantages for the English conduct of the naval war were secured.

The details of the deployment are evident from Chart 30. The strategic justification for the choice of bases so far north in a naval war with Germany was, however, not realized until recent years. Therefore the construction of Rosyth and Cromarty at the outbreak of war was as yet in no wise completed, that of Scapa Flow, however, not even begun.

For the choice of this harbor lying between the desolate and only sparsely settled Orkney Islands as a main base of the British Fleet the primary reason was the great distance from the German bases (450 nautical miles); furthermore the navigating difficulties as a consequence of the powerful and changing tidal currents and the rock abounding channel could only be overcome with considerable danger by an opponent so little acquainted with the channel; finally the opponent must also be prepared before or at least after the attack to be threatened during the long advance or retreat by the English forces at sea. Nevertheless the English Fleet command was in constant unrest about the safety of ships anchoring here to take on fuel as long as sufficient means of defending the harbor against U-boats and destroyers were lacking. Readiness for action also could not be secured when at anchor and for lack of corresponding means of coast defense and U-boat blockades in the early period the protection of the fleet in part fell to the overtaxed cruisers and destroyers.

The base therefore offered no recreation for the fleet which for the reasons just stated was usually at sea.

To be sure Scapa Flow had already a year or two before the outbreak of war been decided upon as a base for the fleet in the event of war but as a consequence of insufficient funds the construction work, in particular the building of fortifications, was put off from year to year. So there was nothing else to do but first to land 3 and 12 pounders from the fleet and in this way create a harbor defense capable of giving assistance, which later was reinforced by 10 and 15 inch guns and special service men of the Royal Marines. As, however, in the early period projectors could not be used for these installations so not much was to be expected from their employment at night. For enemy U-boats it seemed that only Hoxa Sound was navigable, and this only under extraordinarily cautious guidance. A completely safe protection from this could only be afforded by net and hawser barriers, the procuring of which was, however, put off until winter. For the time being they had to be content with deceiving the opponent as to the existence of such means of defense.

Against destroyer attacks protection could be secured by using old battleships intended for harbor defense. The *Hannibal* and *Magnificent* were requisitioned by the Admiralty for this purpose on August 6 and put in commission. On August 15 three hydroplanes and two land planes supplemented the harbor defense.

Also the already constructed bases of Rosyth and Cromarty were, at the beginning of the war, entirely unprotected against U-boats. To be sure there was sufficient artillery defense against destroyer attacks, although the lack of hawser and timber obstructions did not fully exclude even their attack. In view of the high estimation of German U-boats and torpedo boats, therefore, the fear of their attacks on English ships inside their bases was considerable. In Scapa Flow it led on more than one occasion to a false alarm, sudden discontinuance of taking on fuel and immediate putting to sea of all vessels; this even at night and in dense weather under difficult and dangerous navigating circumstances.

Actually the small radius of action of torpedo boats, the entire plan being based on a strategic defensive, the therefrom following employment of torpedo-boat flotillas for the protection of the German Bight and the necessity in view of their comparatively small number of saving them for the intended decisive battle, hindered the German fleet command in carrying out such operations. Besides, it was only after the outbreak of war that the necessity became clearer and clearer of drawing on torpedo boats, for lack of other more suitable craft, to a very great extent for the U-boat combatting and U-boat defense units.

U-boats were not available in sufficient numbers for undertakings of such a nature which with great probability would have resulted in the loss of the boats employed; also the insufficiency of the English harbor defense to the extent just described was then unknown on the German side.

But also, apart from the deficiencies in the harbor defense, the construction of the northern bases, as compared with the Channel ports, was at the outbreak of war still in the initial stage. Neither floating docks, workshops, nor coaling facilities were to be had at Scapa. For coaling vessels there were available only steamers, for repairs merely the two workshop vessels *Cyclops* and *Assistance*. As the situation constantly demanded a rapid replenishing of fuel, so that they could put to sea without delay, all ships of the fleet had to begin to coal at the same time after coming in, a requirement which extraordinarily increased the number of necessary coal steamers.

The organization at first in no way corresponded to these demands. On the contrary, delays occurred owing to the insufficient number of coal steamers and their unsuitable coaling facilities, which in the case of aggressive activity of the opponent might easily have had fatal consequences. (1) On the other hand, the organization of this base made the fleet very mobile. With comparative ease the base could be moved to any point at will if the strategic situation should require it. Some time elapsed, of course, until by thorough organization the cooperation of this powerful organism dependent on a large number of vessels was assured.

Afterwards a cable from the workshop vessel *Cyclops* to the town of Scapa a fixed telegraphic connection with the Admiralty had been established on August 27. The further development of the information service of the base was obtained by the erection of two more radio stations for local service while, besides those at other places already in existence, a direction radio station (2) at Scapa was to facilitate the detection of German ships at sea by means of radio bearings.

(1) (Rapidity of fueling was of vital importance to the empire. Jellicoe "The Grand Fleet," page 84.)

(2) (A radio plant which makes it possible from listening to the signals to determine the direction whence they come. If it is possible to simultaneously determine the direction by two stations favorably situated for this purpose then the intersection of the two bearings gives the position of the ship.)

But not only the removal of the "Grand Fleet" to northern bases but also the war distribution itself made considerable innovations in the existing organization. Before the war the home fleet had consisted of the first, second, and third fleets, which included practically all the ships in home waters.

On the outbreak of war, however, the British Admiralty, as Jellicoe states, divided the home fleets into two sections, namely, the First or "Grand Fleet" and the Second and Third or "Channel Fleet." The details of the make-up are shown in Table 31. Besides the special units of the First Fleet there belonged to the "Grand Fleet" at the beginning other vessels, especially the First and Third Destroyer Flotillas, the separation of which from the Fleet was explained primarily by the incapability of the northern bases to receive a greater number of destroyers. In spite of this separation they were at first placed directly under the "Grand Fleet" so that it could work in close strategic cooperation. This also applied to the U-boats in Harwich. As, however, the carrying out of this intention soon proved to be too difficult, on the order of the commander in chief the latter were placed on August 9 directly under the Admiralty. On the contrary, the Second and Third Fleets soon had forces taken from them for the service of the "Grand Fleet," namely four ships of the Sixth Battle Squadron, the Sixth and Tenth Cruiser Squadron as well as the mine-laying squadron consisting of seven old cruisers. The employment of these ships in the case of the "Grand Fleet" will later be discussed in detail.

Quite independent of the "Grand Fleet" was the operation of the Channel Fleet. It comprised with the Fifth, Sixth, and Seventh Battle Squadrons the older battleships besides the Fifth and Seventh Cruiser Squadrons as well as a Mine-sweeping Flotilla with torpedo boats. Of the Channel Fleet the ships of the Fifth and Seventh Battle Squadrons, as well as the Fifth Cruiser Squadron, had only skeleton crews on board before the mobilization. The extent of their training was also such that before their military service in Portland they still had to pass through a period of training. This was true to a more marked extent of the ships of the Seventh and Eighth Battle Squadrons which before mobilization were not manned, as a rule, and therefore had to undergo thorough training in Plymouth. Consequently the Seventh and Eighth Battle Squadron did not join the Channel Fleet until September 3. On the other hand, the Seventh Cruiser Squadron took part in the patrol of the Dover Straits during the shipment of the expeditionary force to the mainland. Apart from the division, as stated, into "Grand Fleet" and "Channel Fleet," the herein set forth war distribution of the English forces otherwise differed only in unessential points from the statements of the Admiralty at that time. Such deviations were, among other things, the separation of the First and Third Destroyer Flotillas from the "Grand Fleet," the institution of a special "Shetland Patrol Force" consisting of the *Forward* and four destroyers of the *River* class, the assignment of the cruisers *Endymion* and *Theseus* from the

Eleventh to the Tenth Cruiser Squadron, and some other minor details.

Deployment, bases, and war distribution constitute the strategic bases for the intended employment of the English forces.

As strategic tasks of the "Grand Fleet" on the outbreak of war (2) according to Jellicoe were considered the following:

1. Protection of the unrestricted overseas communications for British ships, a vital necessity for an island nation, especially for one that could not be supported by its own land.
2. Constant economic pressure on the opponent by cutting off his overseas communications so as thereby to force him to peace.
3. Covering and support of all of our own troop shipments and protection of their lines of communication and supplies.
4. Safeguarding the country and the Dominion against invasion by enemy forces.

According to the statements of Jellicoe these tasks could be most quickly and surely attained by the destruction of the enemy fleet, however, history shows that it is a very difficult task to force the weaker opponent to give battle. The latter usually avoids such an event and keeps back the most valuable forces—the battle fleet—in the strongest harbors from which it constitutes a constant menace to the sea communications of the stronger naval power. The latter will be compelled by such behavior to constant preparedness, so that at any time battle can be given to the enemy if he gets out before damage can be done by such attacks to the sea communications. The methods of the Napoleonic era had sought to obtain this, and by placing their own squadrons directly off the enemy ports, methods which, however, were no longer used because of the uncalculable action of U-boats and torpedo boats, and to a certain extent also of mines, against such blockade squadrons. Therefore, even before the war, the distant blockade had to be chosen in spite of the disadvantages, which were at once apparent if it is called to mind that the North Sea is a region of not less than 120,000 square miles and that enemy vessels that tried to penetrate a patrol line could on a clear day, on the average, be sighted at a distance of only 8 or 9 nautical miles, but on a dark night scarcely more than a quarter of a nautical mile off. The narrowest place for such a survey was that between the Shetlands and Norway, although here the distance was still 160 nautical miles, to which was to be added the 40 nautical miles of the Fair Island Channel.

A consideration of all these circumstances had caused the Admiralty to establish Scapa Flow as a base in the Orkneys; from here outward the "Grand Fleet" was to patrol the North Sea while the Second and Third Fleets were to protect the Channel, in this inclosure the enemy fleet was to be held fast. In carrying out this task the First Fleet was to take up according to the situation a survey and

preparedness position in the North Sea from which the strategic cooperation with cruiser squadrons was possible. Under the protection of dreadnoughts the latter were to search the North Sea from this place southward for enemy vessels, and in so doing to strive for scouting positions which permitted them to give battle to the German High Seas Fleet in case they should come upon it at sea.[1]

To attain this end constantly outlying patrol forces would have to be disregarded. The latter had in no way justified the maneuver experiences, in view of the frequently changing and difficult visibility conditions of the North Sea these were very easy to penetrate unseen, too much exposed to U-boats attacks as well as to surprise attacks by superior forces.

Even if the English operation order in this form in no way prescribed avoiding a battle under all circumstances, still the British naval authorities decided from the start to give the opponent as few opportunities to attack as possible.

It, therefore, in connection with the distant blockade instead of fixed outlying outpost lines, provided constantly changing sweeps of cruiser squadrons throughout the entire region of the North Sea. A meeting was in this way more or less left to chance; the battle, in particular, to the initiative of the German Fleet. The attack was expected from the latter. In so doing the "Grand Fleet" gave up, however, the choice of the suitable time without knowledge of which, in view of the strategic defensive chosen, a constant preparedness of the "Grand Fleet" at sea was unavoidable. In contrast to the German High Seas Forces the "Grand Fleet," even before the announcement of a state of war, was on August 4, at 9.30 a. m., beginning the distant blockade at sea on the night before on the false report that three German transport steamers had passed the Great Belt on the evening of August 1. The First Battle Cruiser and Third Cruiser Squadrons, as well as the armored cruisers *Cochrane* and *Achilles*, had taken up an observation position south of Fair Island.

The movements in detail are apparent from chart 32. That the first outpost line on August 3 and 4 was laid out so far north of the Shetlands was due to the fact that thereby the narrowest point of the North Sea exit was blocked and ships might be held up, which, perhaps in expectation of the certain outbreak of war, two days before, had left the home ports so as to break through in time to the Atlantic Ocean. On August 5 there was then already a well-defined patrol zone, kept under surveillance by constant patrolling, considerably farther south, approximately in the direction of Hague Sound toward

[1] To effect this purpose it was intended that the main battle fleet should occupy, as circumstances permitted, a strategic position in the North Sea where it would act in support of cruiser squadrons carrying out sweeps to the southward in search of enemy vessels, and would be favorably placed for bringing the High Sea Fleet to action, should it put to sea—Jellicoe, The Grand Fleet, Chap. II, p. 15.

the Firth of Forth. This was distinctly recognizable and was supported by the "Grand Fleet" immediately behind it. In the same line stood toward noon the German auxiliary cruiser *Kaiser Wilhelm der Grosse.* It picked up numerous radio messages in open language from English cruisers, which signals constantly increased with the further advance to northward, about 30 to 40 nautical miles outside of Norwegian territorial waters, until 4 p. m., when the signals became less distinct. At 6 p. m., when the course was taken for Iceland, they again became louder, so that it already believed itself pursued and assumed an occupation of the line Faroe Islands-Iceland by English cruisers. Although all available English forces in the same region were at sea on this day, still the first blockade penetration was successful. The difficulty and incomplete effectiveness of the distant blockade was distinctly shown in these extensive sea areas.

But also other weaknesses of this form of blockade made themselves felt from the start, for already with the first day there was a constant going and coming of forces for replenishing fuel so that soon the battle-cruiser squadron and always a torpedo-boat flotilla and a number of cruisers were not always in position. In view of this circumstance there were doubtless possibilities of military success for the German Fleet provided that its unrestricted freedom of action and full use so far from its bases had been possible and left to its option.

In the "Grand Fleet" the news of the declaration of war on Germany on August 4 at midnight was followed by the first reports concerning the enemy. To be sure they were almost all inexact, but the uncertainty of the news even on the English side is thereby distinctly brought out. It was stated among other things that two German cruisers had passed Drontheim on a northern course, that four torpedo boats had been sighted at the northwest end of the Shetlands, that the German passenger steamer *Kronprinzessin Cecilie* during the night of the 5th passed Stronsay Firth in the Orkneys on an eastern course and finally that a German operation base had been erected on the Norwegian coast at 62° north latitude. Especially reports of the latter nature were frequent in the first days of the war. Examinations by cruisers, however, showed every time that the reports were without foundation, which, of course, was to be explained by the naturally strong aggregation of German merchant vessels in the neutral waters there and also to the frequent touching at Norwegian ports of German warships in preceding years.

On August 7, in the forenoon, the greater part of the battleships, followed by the Second Cruiser Squadron and the First Light Cruiser Squadron went into Scapa to refuel, so that on this day the blockade was maintained merely by the Third Cruiser Squadron with the Second Flotilla, and could be covered only by the First Battle Cruiser Squadron and Third Battle Squadron. The survey was

limited, therefore, to further searching of the Norwegian coast for German bases, then the cruiser squadrons returned also.

Meanwhile the battle fleet had finished coaling and on the same day was already at sea at 7.30 p. m. As a means of exit it this time used the western outlet of Pentland Firth, safeguarded until darkness by the Fourth Flotilla. On August 8 the battleships were southeast of Fair Island engaged in fire-control drills and some ships were conducting target practice when at 10.30 a. m. it was reported by one of the latter, the battleship *Monarch*, that a torpedo had been fired at the ship from a U-boat. This was the signal for the immediate discontinuance of drills, the ships were assembled and half of the Second Flotilla received orders to chase the U-boat. At 7.30 p. m. a periscope was again sighted by the watch officer of the *Iron Duke*, so that he changed course so as to ram it. The same periscope was again reported by the *Dreadnought*, but was not seen again later. Another, and this time indubitable, contact with a German U-boat occurred, however, on the next morning. The small cruiser *Birmingham* of the First Light Cruiser Squadron, acting as convoy ahead of the fleet, on August 9 sighted suddenly, toward 5 a. m., the German U-boat *U 15* on the surface and succeeded in ramming the boat and destroying it, the place of the disaster being marked by a strong smell of petroleum, and rising air bubbles was soon thereafter passed by the fleet and reported by the battleship *Orion*. As has been stated on the appearance of Jellicoe's book, 10 German U-boats which left Helgoland on August 6 to attack the enemy grand fleet actually succeeded then in meeting the latter without, on account of the thick weather, being aware of it or of the herein entailed loss of the *U 15*. (Chart 9.) The loss of the *U 13* remains, however, completely a mystery, even although it is not inadmissible that the stated attack on the *Monarch* or *Grand Duke* of the day before was to be attributed to this. However, a proof of this supposition is only possible if the position of English ships for this period of time were quite exactly known. (See Chart 33.)

The success of the *Birmingham* was greeted in the English fleet with the greatest satisfaction, as it was qualified to compensate at least partially the disagreeable surprise and excitement which the appearance of the dreaded new weapon so far from its bases must doubtless have occasioned. To be sure the fleet of dreadnaughts remained for the afternoon in the same place in spite of the supposed danger, but they endeavored to make difficult further attacks by continual zigzag courses. Unfortunately the German U-boats, without knowledge of the immediate vicinity of the enemy grand fleet, continued their return trip according to plan.

The Admiralty was much more disturbed by the appearance of the U-boats than was the commander in chief of the fleet. At their

direction the fleet of dreadnaughts, extending far to northward, on the morning of August 10, began the withdrawal into the region *west* of the Orkneys and Shetlands, while the Second and Third Cruiser Squadrons and the First Light Cruiser Squadron, together with the Fifth Flotilla, were sent toward the Norwegian coast, so as to examine the latter for supposed enemy U-boat bases. No explanation could be found on the English side for the appearance of German boats so far from the Helgoland. For the same purpose the armored cruiser *Drake* was sent to the Faro Islands, later reinforced by two ships of the Tenth Cruiser Squadron. Finally, the commander of the fleet in connection with these events likewise returned to Scapa for the discussion of further measures which would take into account the newly arisen situation to get in touch with the Admiralty by cable.

Actually German U-boat bases were not present on the Norwegian coast, consequently the cruiser advance thither was without result; however, it was not allowed Commodore Goodenough with his flagship the *Southampton* to go into Stavanger and personally convince himself of the loyalty of the Norwegian authorities and the groundlessness of the British fears. Hence the German U-boats advance, in spite of the fact that it did not succeed in inflicting damage on the enemy Grand Fleet, still achieved very considerable strategic effects.

The appearance of the boats in the English blockade zone had been sufficient to cause the English dreadnaughts, at least for a time, to withdraw from the North Sea and to cause the advance of the cruiser squadrons to the Norwegian coast, thus giving up their blockade positions, so that on August 10 the exit of the North Sea into the Atlantic Ocean stood open. There could be no question of an effective blockade, for not until August 11 was it possible to close the gap left further north by the Tenth Cruiser Squadron, consisting of 8 cruisers of the antiquated *Edgar* type as an emergency measure. Unfortunately these effects of the U-boat advance remained entirely unknown to the German fleet command. Even German merchant vessel traffic could be of no use, because the ships on due warning against the danger of war had almost all sought the nearest port.

In the case of the return of the cruiser squadrons and destroyers from the Norwegian coast for coaling to Scapa and Cromarty, the Second Cruiser Squadron then extended far to southward. In this, for the first time since the beginning of the war, a British unit of the "Grand Fleet" appeared again from the north at the latitude of the Firth of Forth, but remained in this way still 200 nautical miles distant from the German bases. *In other respects the first week of the war was marked by the withdrawal of the English dreadnoughts from the North Sea into the Atlantic.* There, west of the Orkneys, the battle squadrons now held tactical and gunnery exercises, and on August 15, with the exception of the Third Squadron, went to Scapa for fuel.

The fears which the appearance of the German U-boats had awakened went, however, so far that even Scapa was not believed any longer immune from their penetration. For this case a new base, namely, Loch Ewe, on the west coast of Scotland, was tried. The third Battle Squadron was accordingly sent there, although the distance of the squadron from the "Grand Fleet" of not less than 120 nautical miles had to be taken into the bargain. *The knowledge of such connections would have been invaluable for the German fleet and command for a favorable judgment of the strategic situation.* This knowledge, however, was not to be had then, and even the scanty news that was obtained came so late that meanwhile, in view of the naturally quick movements of the naval forces, the strategic situation must have completely changed again. The insular separation of the Islands of the United Kingdom offered extraordinary difficulties for the German intelligence service.

In the meantime the battle cruisers had gone to sea again immediately after finishing coaling on August 12 and were cruising with the greatest economy in fuel on the following day west of the Orkneys, while in the North Sea at the same time the Third and Tenth Cruiser Squadrons were at their positions, the former being southeast of Aberdeen.

In regard to the German Fleet the British Admiralty had only scanty information at this time. The only more definite information was obtained from a neutral steamer which meanwhile had come to England from Hamburg. Her captain asserted that he had seen 14 enemy battleships with several mine layers off Cuxhaven, as well as about 30 torpedo boats between Cuxhaven and Helgoland. Off the Jade a considerable mine field was said to have been laid out. Further scouting and at the same time protection against German attacks on troop shipments in the Channel could be accomplished only by the English making an advance into the region of the German Bight. For such an extensive undertaking, however, one thing had to be considered. As early as the end of July, 1914, the Admiralty had obtained from an extraordinarily reliable source the report that it was intended on the German side, in the event of war, to have an extensive mine offensive in British waters, even the exact location of many of the mine fields was known. Provided that these statements agreed they awakened the probability that the enemy, without consideration for the British and neutral merchant vessel traffic, would lay mines even in the open sea, particularly, of course, in the approaches from the northern bases to the German Bight. The undertaking of the *Konigin Luise* seemed to confirm this supposition. Right here, then, certain disadvantages of the distant blockade began to make themselves felt; the southern North Sea was left defenseless against the enemy from the start, and therefore no guarantee as to the freedom of the waters there from mines could be assumed.

In the southern North Sea the English Fleet felt itself accordingly threatened by invisible and unknown dangers and no longer master of the situation. For an advance in that direction, therefore, extraordinary precautionary measures were necessary, all the more so as according to the opinion of the English supreme command losses or inquiries of even a few dreadnoughts might shatter the English superiority at sea, and thereby in view of the dependence of the island kingdom on the mastery of the sea could endanger the entire situation.

It therefore decided to allow the six gunboats equipped as mine layers to proceed on the advance southward ahead of the fleet, although thereby the speed of all the ships was cut down to about 10 nautical miles and hence the danger of successful U-boat attacks on the line was considerably increased; on the other hand, a complete security from striking mines was not to be expected, in view of the small number of mine sweepers from the measure either. As the only other means it was still possible to let older and less valuable ships proceed as obstruction breakers ahead of the squadrons, so that in event of meeting an obstruction the valuable dreadnaughts will be kept from mine injuries at the expense of the older ships. For this purpose, on August 8, the Sixth Battle Squadron had already been withdrawn from the "Channel Fleet" to Scapa Flow and was assigned to the next advance.[1] The undertaking began on August 13 at 7.30 p. m., after coaling at Scapa had been completed, but two battleships were unable to come until later as, on account of the insufficient number of coal steamers, the replenishing of the fuel supply was not yet finished. Later the battleship *Ajax* had to be sent back because one turret was not ready for action.

Again the ships left Scapa for the west, on the following day gunnery exercises were discontinued, then all battleships and battle-cruisers assembled toward 3 p. m. about 40 nautical miles northwest of the Orkneys and from there began the advance to the North Sea. The afternoon was spent in battle practices, especially such as concerned development of the line from the order of march to that of battle. At midnight the battle fleet passed Fair Island Channel, and on August 16 at 4 p. m. united with the Second and Third Cruiser Squadrons as well as the First Light Cruiser Squadron. At 5 p. m. the Second and Fourth Flotillas reached the fleet and at 7 o'clock the mine sweepers and also four ships of the Tenth Cruiser Squadron. Then, on a southeastern course, began the exploration toward the German Bight as planned, the battle cruisers being 40 to 50 nautical miles ahead of the main fleet. At the same time the Seventh Cruiser Squadron and the First and Third Torpedo-boat Flotillas started concentrically from Harwich, apparently for the purpose either of combining for day battles with the "Grand Fleet" or of attacking

[1] The Sixth Squadron was therefore very soon termed in the fleet, "Mine-bumping squadron."

German forces returning from the north to Helgoland Bay at night. Furthermore, two English U-boats had orders to be off the Ems and Jade, respectively, at 7 a. m., so as to report and attack at the right time any German forces that might be coming out. The carefully begun undertaking had its conclusion for the northern forces at the parallel of latitude of Horns Reef without a German vessel being sighted. There, still 100 nautical miles from Helgoland, the return trip was begun at 10.30 a. m., probably so as to be out of range of the German torpedo boats in time before darkness. Consequently the possibility of an encounter with German forces was not offered. The only major advance of the "Grand Fleet" in the first month of the war therefore passed without result. (See Chart 34.)

While returning, the battle cruiser *New Zealand* falsely reported an enemy U-boat, and thereby caused the fleet to continue the trip back on a zig-zag course. Later the cruiser squadrons spread out, running ahead of the battle fleet in a scouting line not more than 150 nautical miles long, on the eastern flank of which the Second Cruiser Squadron and the First Battle Cruiser Squadron headed for Lister on the Norwegian coast, so as then running obliquely across the North Sea from there to steer a course for Kinnaird Head. West of these forces, but running not so far to northward, followed the Third Cruiser Squadron with the Third Battle Squadron, while the Second Light Cruiser Squadron first formed the rear guard and then, relieved at night by the Second and Fourth Flotillas, the advance guard of the main fleet, while the mine sweepers which had picked up the sweeping apparatus, were employed by the squadron as U-boat protection. Meanwhile the Tenth Cruiser Squadron maintained connection with the battle cruisers. During the night the Second Cruiser Squadron was sent to Cromarty and the Tenth to Scapa for coaling, and also the Third and Fourth Battle Squadrons; the Second Flotilla and the mine sweepers followed. The rest of the fleet remained on a northern course, picked up the battle cruisers at daybreak, and at midnight stood again in Fair Island Channel, this time not going to Scapa, but with all the ships going to Lock Ewe on the afternoon of August 18. The Second Cruiser Squadron had meanwhile, after completion of its scouting trip, taken up an outpost position in the North Sea off Pentland Firth, while the Tenth Cruiser Squadron, after completion of coaling, again assumed its customary blockade position between the Shetlands and Norway. The special importance of an effective blockade at this place was expressly emphasized and a reinforcement of four armed merchantmen was sent there.

At the same time with the English Fleet advance there were only three U-boats on the German side engaged in undertakings against the enemy. Again one of these boats, just as on the first time,

arrived in the vicinity of the enemy main fleet, but this time chance prevented the knowledge of this by the German boats. Consequently the fleet command was still without knowledge of the movements of the English Forces and in particular was not in the least aware that the enemy main fleet had stayed not more than 100 nautical miles from Helgoland, and in that way a certain possibility of attack had been on the German side, even if only for a very limited time.

It will be recalled that the *U 20* and *U 21* had left Helgoland for the north on the afternoon of August 15 (Chart 11) and that the *U 20*, on August 16 at 4 a. m., had made out a cruiser and a torpedo boat in the latitude of Limfjord, an observation which may have been correct, for at the same time the main English Fleet was 120 nautical miles west. This distance diminished on the following day to 90 nautical miles without more of the English forces being seen than a destroyer, but still this encounter was sufficient for the commander of the U-boat to conceive the doubtless wrong idea of a systematic pursuit, for on the English side the U-boat was neither sighted nor reported. Just as little, therefore, did the observations of the U-boat on August 18 concerning the further pursuit by enemy destroyers correspond to the facts.

Considerably closer to the enemy, on the other hand, came the other boat, *U 21*, commander Lieut. Hersing, when on August 17 he had started an advance to the line Egersund-Kinnaird Head. There, at 7 a. m., it was by chance hardly more than 40 nautical miles from the English battle squadrons. Then, however, the courses ran apart as the English main fleet was headed for Fair Island Channel, while the *U 21*, on the other hand, steered for Moray Firth lying to southward, because the main base of the English fleet was sought there and not in the Orkneys. Consequently the *U 21*, too, was not allowed to discover and attack the English main fleet. When, on August 18, the boat arrived off Moray Firth the Third Cruiser Squadron had already gone in there, while the other forces were going to Scapa and Loch Ewe, so that, even during its stay off Moray Firth and Firth of Forth, no more opportunities for attack were offered. The *U 22* experienced the same ill luck on August 17 and 18 off the Humber, as the returning forces from the German Bight did not proceed to this harbor but to Harwich. The possibility of being able to change the bases and have them available at several points of the coast proved to be extraordinarily advantageous for the English Fleet, in spite of the difficulties otherwise entailed in the floating basis.

For the rest, however, the slight result of this U-boat exploration, in view of the insufficient number of forces employed, could not be viewed with surprise; still less, therefore, were justified such far-going consequences as the fleet command actually deduced from it. It believed that it could be assumed from the result that "the English

Main Fleet, and probably all warships, were staying at such a distance from the German coast that finding these forces would surpass the technical capability of the U-boats" and "that the English battle fleet would avoid the North Sea entirely and keep far out of range of our forces."

For the third Cruise of the English Fleet these conclusions were, however, not correct.

Already, on August 20 at 7.30 p. m., the battle fleet, with the exception of the *Orion*, which, on account of serious condenser damage, had to remain behind, went to sea again, remained on August 21 at target practice west of the Orkneys, and early on the morning of the 22d passed through the Fair Island Channel into the North Sea. Meanwhile, as a consequence of the exertions in the constant cruising, as well as the necessity of having the guns of the middle artillery constantly manned on account of the U-boat peril, the number of the crew on ships qualified as stokers and gun crews turned out to be insufficient. Consequently a reinforcement of the fleet by about 2,000 men of the reserve took place, a measure which was provided for on the German side when ready for mobilization.

In Fair Island Channel the First Light Cruiser Squadron and, in the afternoon, the Second Destroyer Flotilla, joined the fleet, the flotillas for the purpose of taking the U-boat protection during the rest of the advance. The First Battle Cruiser Squadron, minus the *New Zealand*, which had gone to the Humber to join with the *Invincible* there, was prevented by the fog from leaving Scapa on August 21, spent until August 22 in gunnery exercises west of the Orkneys and finally appeared likewise 100 nautical miles east of the Orkneys, so as to assume from this point the support of the Third and Sixth Cruiser Squadrons, which had renewed the blockade between Scotland and Norway. (See Chart 35.)

On the following day the Second and Sixth Cruiser Squadrons departed from these positions, supported by the battle cruisers as far as the 52d degree of latitude, about the latitude of Edinburgh. In so doing the Sixth Cruiser Squadron, standing on the eastern flank, was to explore the southern coast of Norway and, in company with an armed auxiliary cruiser, to capture German merchant vessels that might try to leave Norwegian territorial waters at Jaderen Point. Fanciful suppositions concerning a German operation base for airships on the island of North Nona west of the Orkneys made at the same time a dispatch of the cruiser *Sapplio* there necessary, which brought out the lack of foundation of this and unsuitableness of the place for the stated employment. In general, reports concerning supposedly seen enemy airplanes and airships, which turned out on closer examination to be groundless, were at the beginning of the war apparently at least as frequent on the English side as on the German.

As a support for the cruiser squadron, the battle fleet was also available, with the exception of the Third Squadron, that had been sent to sea to coal at Scapa, although for the U-boat protection only the half of the Second Flotilla was available while the other half was east of the Orkneys chasing a U-boat supposed to have been sighted there. The fear of U-boat attacks was therefore very great on the battleships; several times the fleet was disturbed on August 23 by false U-boat alarms; actually, however, there were at this time no German U-boats in the water there.

On August 24 the First Battle Squadron and the First Light Cruiser Squadron had to be sent to Scapa for coal, but the latter did not go in, however, until it was relieved by the Third Cruiser Squadron. Except for this the cruisers continued their patrol service. On August 25 these followed for the same purpose the relief of the First Battle Cruiser Squadron by the Third Battle Squadron. Then the rest of the battle fleet returned to Scapa, where the ships entered on the 26th at 8.30 a. m. In doing this they were hindered by fog just as when leaving. On this day the support of the cruiser line consisted merely of a squadron and that of older battleships. The *Iron Duke*, the Second and Sixth Battle Squadrons, and the Second Flotilla lay in Scapa; however, immdeiately after coaling the battle cruisers left the base again to join with the Third Squadron. Toward evening the battle cruisers also left their blockade positions, the Tenth and Sixth Cruiser Squadrons going to Scapa, the Second to Rosyth.

Therefore, from August 21 to 25 considerable portions of the "Grand Fleet" were almost continually at sea. It must therefore have meant a certain disappointment for the supreme command that nevertheless during this time German ships found an opportunity to lay mines off the Humber and Tyne. As we learned from the earlier account, the German forces used for this purpose during the undertakings of August 25 and 26 crossed the North Sea, going and returning without meeting a single English ship. (Charts 15 to 17.) This, then, very surprising fact can now be explained by the fact that the British cruiser squadrons in those days did not go farther south than the 56th degree of latitude, and hence left the southern part of the North Sea entirely open to the enemy. The German mine barrages now laid directly off the English bases of this region furnished the proof that this conduct had not remained unused by the Germans, still it did not cause English fleet command to in any way change their once assumed attitude. In order, however, to protect the coast against a further advance of the enemy at least to some extent without the help of the fleet, the fleet command proposed to the Admiralty to push out farther to sea the flotillas of the coast defense (patrol flotillas). In the further apprehension that such

mine undertakings might be directed even against the northern bases of the fleet, there was requested the getting ready as soon as possible of 20 fishing vessels with dragnets and other mine-sweeping devices for the constant searching of the waters about Pentland Firth as well as a rapid as possible increase in the number of other light and fast vessels for the patrol of the bases. It is evident from this that at the beginning of the war the English Navy, too, lacked light patrol forces.

At the same time the Admiralty took steps for an English counter-offensive by setting for August 28 an undertaking of the forces directly under it from Harwich to the German Bight. The commander in chief of the "Grand Fleet" was not informed of this until August 26, although the First Light Cruiser Squadron under him was likewise to take part. What he heard of the undertaking caused him, however, to make at once urgent remonstrances to the Admiralty against carrying it out, in any case without the help of battle cruisers proceeding in advance and these likewise dispatched to the south, while the Admiralty was requested to inform the leaders of the southern forces of the presence of this squadron in the German Bight. According to the already described result of the battles of August 28, it is quite indubitable that these measures alone prevented an English failure on this day. On the other hand, strange to relate, a support of the battle cruisers by battleships also was not considered necessary by the fleet command. The "Grand Fleet" kept itself, furthermore, after it had gone to sea on August 27, over 300 nautical miles distant from the scene of conflict, without the possibility of participating in the event that the battle cruisers would encounter superior contraction or be cut down in speed by U-boat attacks and mine hits. Only the outcome at that time justified the retention of the main English Fleet; quite similar to reasons sufficient on similar occasions on the German side. It was not desired to expose the valuable dreadnaughts to the English overestimated effect of U-boat attacks by day or torpedo-boat attacks by night as well as at the same time to the mine danger.

Even on August 29 the fleet remained at sea in the usual way, while the battle cruisers, together with the First Light Cruiser Squadron after a successful fight, went into Scapa at 8 o'clock in the evening. Likewise the Third Cruiser Squadron went on the same day to Cromarty, while the blockade position off the Norwegian coast was maintained by the Second Cruiser Squadron, and west of it by the Sixth and Tenth Cruiser Squadrons. At the same time these blockade lines were supplemented farther north by another one of the armed merchantmen, so that in this way blockade runners were compelled to run through at least one of these lines in daytime, even if they succeeded in passing unnoticed through the other at

night. This system was regularly carried out afterwards as far as the forces available were equal to it. However, in order to make the blockade still more effective, and in particular to be able to better patrol the eastern approaches to Pentland Firth, the mine-laying squadron, too, consisting of 7 old cruisers, was taken from the "Grand Fleet" for the blockade service, especially as up to then an employment of these ships in their own service had not yet been considered. The mine layers were placed east of the Orkneys in a special exploration zone, while west of the Fair Island Channel, from August 27 on the armed merchant vessel *Oceanic* cruised about so as to watch the ship traffic in this region, too.

Not until August 30 did the fleet begin the return trip to Scapa, where it put in at 8 a. m. on the 31st. There again remained at sea only the Third Battle Squadron acting as a support for the Second Cruiser Squadron cruising along the western Norwegian coast up to the 31st. On the afternoon of the 31st the Sixth Cruiser Squadron was withdrawn from the western blockade zone, while the Tenth remained on duty there.

The 31st of August brought another task for the ships at sea. This was namely the report coming in that the possibility of more enemy mine undertakings, and indeed this time against Pentland and Moray Firths, was to be expected on the night of September 1. The attempt was therefore made with the forces at sea to cut off the minelayers on their return. For this purpose were available the First Battle Cruiser Squadron, the Third Battle Squadron, as well as the Third and Tenth Cruiser Squadrons. However, the undertaking was without result as no mine layers showed up. With this the undertakings of the "Grand Fleet" during the first month of the war came to their end.

To be sure the fundamental operation order of the British Admiralty, which doubtless prescribed the aloofness of the "Grand Fleet" in all undertakings, did not, however, receive the stamp of complete strategic defensive until the unexpected appearance of German U-boats in the northern waters as well as by the German mine offensive and the strategic consequences entailed by both circumstances.

The radius of action of the German U-boats, as well as their ability to stay at sea, had exceeded everything that could be expected from the previous experiences on the English side in the working possibilities of this weapon. The repeated sighting of enemy U-boats in the immediate vicinity of the Orkneys and Shetlands, together with the assumption that the enemy had the middle North Sea almost constantly occupied by U-boats, meant, according to the deductions of Admiral Jellicoe, such a serious menace to the English dreadnoughts that for the movements and operations of the English Battle

Fleet it was of signal significance. As a consequence of the location of the First and Third Destroyer Flotillas at Harwich the fleet had available only over 40 destroyers, a number which was just sufficient for the protection of the battle fleet and battle cruisers against U-boats. If it is recalled, however, that their fuel supply permitted the dreadnoughts to stay at sea about three to four times as long as the destroyers, whose supply was exhausted even in three days and nights, so the heavy ships had no choice but either to return with the destroyers together to port or to give up partially or entirely the U-boat protection if the blockade was to be maintained. In the early period of the war the latter course was adopted, but as a consequence the ships had to be kept back in the northern part of the North Sea so as to make the risk bearable if only to some extent, at times it was even necessary to withdraw the fleet into the Atlantic Ocean and to have it based on Loch Ewe in the Irish Sea instead of Scapa.

Another danger which confirmed the English fleet command in this resolution came from the active German mine offensive against the English coast. Besides it was believed, that at least it could be so assumed, also the open North Sea would very soon be strewn with mines in such places by the enemy where they might be very dangerous to the English fleet without the opponent giving due consideration to international law; if then the English battle fleet moved, then, in spite of this into the waters of the central and southern North Sea, then this could very easily lead to a loss of a number of our own dreadnoughts by mines and thereby lead to an equalization of forces in favor of Germany. The only protection on the other hand could have only been offered by the mine-sweepers, which constantly would be ahead of the fleet with apparatus in position. But even if sufficient vessels had been available for this purpose, which was not the case, then there again arose the danger, because of the impediment entailed by such a method, the speed of the fleet would be cut down to 10 nautical miles and the necessity of keeping the fleet without a zigzag course on as steady a course as possible behind the mine sweepers that enemy U-boat attacks would be favored.

It was therefore because of the U-boat and mine danger that the English battle fleet was compelled to keep itself, as a rule, in the northern part of the North Sea where the risk of proceeding without U-boat protection could be better cared for and where, as a consequence of the greater depths and the distance from the German bases, enemy mine undertakings could be discovered before they endangered valuable ships.

Such a detention of large and valuable ships had as a consequence that the naval war in the North Sea was not, as expected by many, characterized by major and decisive battles but was first of all intro-

duced by mine, U-boat, and cruiser undertaking, such as in general those of petty warfare, and was even throughout distinguished thereby. Even in the case of these undertakings conflicts seldom occurred because on the British side even the cruiser, for which a U-boat protection by destroyers was not provided because of lack of vessels, were held back apart from occasional advances into northern waters. In spite of this extreme unsuccessfulness, however, a constant and strikingly high degree of preparedness for battle was the distinguishing characteristic of the strategic situation. Still on the English side at any time an offensive blow of the German Fleet, either against the troop transportation in the Channel or against the English east coast was expected. Even the holding back of the battle fleet in northern waters seemed qualified to demand such undertakings of the enemy, especially if perhaps he could choose the particularly favorable time when the fleet, or at least its destroyer flotillas, because of refueling returned to the bases and therefore was not immediately ready for action. To diminish this danger as far as possible was therefore the constant endeavor of the English supreme command and it succeeded as a rule, at least during the main troop shipments, in keeping the fleet at sea. In so doing, however, it was felt very disadvantageous that it was not possible in the early stage of the war to obtain news in time of the sailing of German forces from the German Bight. For lack of close blockade of the German Bight by surface forces the opportune recognition and reporting of a German advance fell to U-boats in advanced positions but the latter were at that time, because of inadequate radio equipment, not yet in a position to get their reports through directly and opportunely to the command. Against the sailing of enemy forces at night the U-boat patrol proved to be usually ineffective anyhow.

These explanations are taken from Jellicoe's book. They show distinctly that the English strategy, primarily one of aloofness, soon under German influence changed to a complete defensive. In so doing the most important presumption was based on the German operation order to harm patrol and blockade forces of the German Bight by attack and in this way to bring about an equalization in strength. The efforts to create this assumption had as a consequence the direct opposite, as the English forces hereby were only driven farther from the English bases. In view of the slight scope of these undertakings they were not calculated to cause the opponent to change his strategy and adopt a closer blockade of the German Bight. An opportunity, at not too great a distance from the Helgoland, to attack English forces came only on one day, August 16, and without the Germans being aware of it. On this day, however, the high seas fleet was not at sea. Even if this had not been the case a meeting in view of the extent of the sea sector between Horns Reef and Ter-

schilling would have always been dependent on chance. This was due in general to the movements of the two fleets in extensive sea areas at a time when the scouting work by airships and airplanes was still in its initial stages. In view of the facts it is difficult to decide whether frequent advances of the German Fleet into the central North Sea would have influenced the conduct of the opponent more than the minor warfare undertakings described in the sense desired by the Germans. Of course, however, it must be regretted that attempts in this direction also failed, although there was then no knowledge at all of the great extent of the British withdrawal. This circumstance is to be as little attributed to the defensive attitude of the British Fleet as to the lack of personal bravery on the contrary. The overestimation of the U-boat danger was sufficient cause, as it controlled the fleet commander as well as his opponent. Doubtless the chances of the English U-boats for getting into the narrow German Bight for an attack were considerably more favorable than for the German boats in the broad and far distant, from their own bases, sea area between Norway and Scotland. Under these circumstances the fleet chief did not wish, before the decisive battle which he expected definitely at the given time, to expose even a *single* dreadnought to the action of enemy U-boat torpedoes, so that in any case *all* forces would be ready for the battle.

Apart from the great moral damage, however, the German procedure brought it about that up to this time any possibility of coming to blows with the enemy had to be given up at the start unless the latter directly attacked the German coast. To be sure had the way been paved for such possibilities by frequent going to sea of the German High Sea Forces then, instead of equalization of forces striven for by the destruction of *detached* enemy forces, the decisive battle against the *whole* English superior forces could have developed in the middle or southern North Sea. But even this case lay within the bounds set forth in the German operation order if it only were possible to make the enemy give battle close enough to the German Bight, so that by day it was exposed to the attacks of German U-boats and by night to German torpedo boats. In this way the situation would be created for which the operation order prescribed as follows: "If before the desired equalization of forces a favorable opportunity to strike is offered then this must be used." The creation of such an opportunity must be striven for with all means. That the fleet command did not succeed in this was due less to the restrictions which were based on the operation order than to the all too cautious anticipation of the opponent and his intentions. The great reservation of the fleet is all the more to be regretted, as in the case of the fleet command no doubt could longer exist concerning the effect of

its petty warfare carried on even after the first weeks of the war with two slight means.

From all this it follows that the operation order at all events as composed under the express approval of the chief of the Admiralty Staff no longer corresponded to the circumstances then existent. Just the unexpectedly great retention of the British forces together with their constant increasing withdrawal from the southern and middle North Sea before the German U-boats, which was not evident in its full extent on the German side, opened up to the German Fleet a scarcely expected freedom of movement and therefore it was to be tested how this could be made use of. At first there resulted the peculiar and in view of the mighty agglomeration of fighting means all the more surprising condition of a complete strategic defensive by both parties. Too much dominated by the views of the continental Napoleonic school which prescribed for the side superior in numbers the quick and complete destruction of the enemy forces, on the German side they confidently counted on an immediate well planned offensive of the far superior English Fleet. Instead of this there was experienced the return of the British naval war command to the maneuvering tactics of the prenelsonian period which avoided battle decisions if possible and prescribed the law of action. While, therefore, in the war on land the life and death battle soon raged very near the absolute form of warfare, on the sea hostilities were conducted which hardly surpassed the scope of petty warfare; a situation the continuation of which could only be agreeable to the English naval command. If it succeeded in preventing the enemy from striking other than great superiority in numbers, aided by an unparalleled favorable geographical situation, and furthermore, through the maintenance of the fleet intact as well as the threat of possibilities of action, then only one method of employment was the result which to English naval science at that time, and even in the year 1690 before the battle of Beachy Head, had been characterized by Admiral Herbert as "fleet in being."

For the German Fleet there existed, however, a quite different situation. Here the officials responsible for the use of the fleet, in spite of all superiority in numbers and in spite of the inadequate geographical bases for a successful conduct of naval war, must anew consider the question so important in the case of strategic defensive—where may I strike without risking too much and where and when must I strike even at the risk of being destroyed? In the further course of the history of the naval war in the North Sea we will recognize what serious consequences the limiting determination of the operation order for the *time of unrestricted employment of the high seas fleet* was yet to have.

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NAVY DEPARTMENT.
Washington, D. C.

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MONTHLY INFORMATION BULLETIN.

NUMBER 11—1921—15 NOVEMBER, 1921.

FOR CONVENIENCE IN ROUTING.

Officer.	Initials.	Date received.	Date forwarded.
Captain			
Executive Officer			
First Lieutenant			
Navigating Officer			
Gunnery Officer			
Communication Officer			
Engineer Officer			
Medical Officer			
Supply Officer			
First Division Officer			
Second Division Officer			
Third Division Officer			
Fourth Division Officer			
Fifth Division Officer			
Marine Officer			

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AERONAUTICS, JAPAN—GENERAL.

Source: Reliable.

(9318–H.)

9 September, 1921.

Recently a number of newspaper correspondents visited the Mitsubishi Internal Combustion Manufacturing Co., at Nagoya, the Kiki Arsenal, Nagoya, and the School of Airplane Firing, at Akenogahara. The following account of their trip is taken from the "Aviation Magazine:"

The Mitsubishi Internal Combustion Manufacturing Co.

"This company is a branch of the Mitsubishi Dockyard Co., Kobe, and was established in Nagoya in June, 1920. Its purpose is to manufacture motors for airplanes. The company has several times sent experts and workmen to England and France for study, and in January, 1921, Capt. Jordan and nine other English experts arrived. The company is capitalized at yen 5,000,000, the manager being Vice Admiral Takeda, a former commandant of the Naval Engineering School. The area of the plant is about 59,000 tsubo (1 tsubo equals 4 square yards), but only about one-fourth of it is used at present.

"In addition to the manufacture of bodies of planes for the army and hydroplanes for the navy they were concentrating their energy on the manufacture of Hispano-Suiza motors, 200 to 300 horsepower. Unfortunately only about 6 per cent of the workshops are completed."

Kiki Arsenal.

"This arsenal struck us by its perfection and size, especially as compared with the Mitsubishi plant, which we had just seen. The systematic order of the manufactured parts, their examination, finishing, and testing, and the thoroughness of the work, impressed us very favorably. Col. Sasamoto, the director of the works, told us that the Japanese are not inferior to foreigners in technical ability and that the motors (Salmson) manufactured here were quite as good as those made in France."

Akenogahara.

"This firing field is reached from the station Miagawa, being about five minutes by automobile. Maj. Akabane is in command of the school and explained to us conditions at the school. He said that this school was still in its infancy, and that it took about one month

for competent pilots to finish the course, the number of shots allowed each student being 3,000 rounds. At the time of our visit there were six students, all graduates of Tokorozawa. Aerodrome consists of more than 280,000 tsubo. We saw 2 Sopwith and 4 Nieuports equipped and ready for firing. The machine gun was mounted near the seat and was so regulated with the motor that the shots go through the revolving propellers. We went first to the firing range on the coast, about 2 miles from the school. Here a captive balloon was floating in the air, and its streamer of red and white was flapping in mid-air. A student in the Nieuport type took the air and assumed the position of attacking an enemy from a height of 600 meters. Coming down at an angle of about 45° he fired on a model airplane on the sea, flying at the speed of 120 miles an hour. The shots spattered all around the target, and it was hard to believe that he alone piloted the machine, found the target, and did the firing. Then a Sopwith, with pilot and observer, had a single combat in the air with a Nieuport. From the Sopwith a long streamer connected with a cord about 200 meters long was flung out. The Nieuport closed up and attacked this streamer with a camera—that is, the camera, like a machine gun, is planted on the machine and so arranged that it will take the picture of the object and indicate the distance from the machine and the amount of angle. The result of the shot is decided by developing the plate. Then we saw a machine gun firing on the beach. The instructor of firing gave an exhibition and in his first trial hit a red toy balloon which was floating in the air, at his sixth shot. And, again, he exploded the toy balloon at his fourth shot. Another instructor then fired "combustible" shots at a target soaked with gasoline, and every hit was answered by black smoke, the target soon taking fire. Three kinds of ammunition are carried in the plane—the common, the "illuminated," and the "combustible" shots, the number per gun being usually 600 to 1,000. The recent tendency is to carry as many as possible. In an air combat both parties moved in an organized formation, and the scouting and bombing units act, as a rule, under the protection of chasse units. Therefore the attacking party tries first to disorganize the enemy and to develop individual combat, while the defending party tries, as much as possible, to keep an organized formation in order to accomplish their mission. Firing with an aerial machine gun is usually within a range of 600 meters. The minimum distance for the attacking party to approach the enemy is about 50 meters.

"A military surgeon then made a very interesting talk in which he said that the Japanese are prompt, clever, and dauntless in all respects, and from this standpoint the Japanese have by nature the temperament of an aviator."

SHIP ORGANIZATION, BRAZILIAN NAVY.

Source: Reliable.

(14920.)

17 September, 1921.

By decree of the President of Brazil, issued on 6 September, 1921, there were created for ships of battleship type two new billets to be filled by officers of the rank of lieutenant commander. These positions were created due to the necessity of freeing the executive officer of battleships from the details of duty concerning personnel and material, duties which have been absorbing too much of his time with prejudice to the carrying out of his other duties, such as direction of all the services on board, especially those of instruction and drill.

The details of the order follow:

ART. 1. There are created on board ships of the type *Minas Geraes* the positions of "personnel officer" and "material officer," which will be filled by officers of the grade of lieutenant commander.

1. The personnel officer will (1) receive from the division officers the various details of men over which they exercise jurisdiction and with these lists draw up the detail of daily duties and watches; (2) distribute among the divisions according to the needs of the general service such personnel as is received on board; (3) take cognizance of orders emanating from various higher authorities relative to passages, expeditions, transfers, ratings, disratings, examinations, inspections, enlistments, identifications, promotions, special furloughs, leaves of absence, and take steps to see that division officers are made familiar with these orders; (4) transfer personnel in accordance with their aptitude and the needs of the service from one division to another, and also with the consent of the respective division officers; (5) draw up instructions for any post or detail which may be added to the general detail of daily service and also in cases of extraordinary services, such as landing forces and special duties in case of ship in dock; (6) instruct the divisions in the duties treated above; (7) present monthly to the executive officer a written report on the lists of the division (whether up to date, deficient, etc.); (8) assign quarters, cabins, and living spaces to officers, subofficers, and crew; (9) direct the service of the men's messes, including cooking and serving of the food; (10) direct the service of care of small arms and equipment and of prisoners; (11) draw up the list of prisoners, see that sentences of solitary confinement are carried out, and notify division officers concerning them, also supervise the carrying out of all other punishments; (12) organize in accordance with the orders of the executive officer the duty list in port and at sea of officers, subofficers, and petty officers; (13) take charge of the canteen and all the office duties of the personnel and of the writers; (14) sign in the enlist-

ment records the remarks relating to "history" which do not refer to conduct, the latter being the duty of division officers; (15) sign in the enlistment records the remarks of "debit and credit" in case of the absence of the executive officer; (16) present daily to the commanding officer the punishment book filled out in accordance with instructions contained in the Naval Disciplinary Code; (17) make one complete list of the recommendations for promotion of enlisted men, presented by division officers; (18) notify division officers of any change in their personnel; (19) have under his charge cases of desertion and disposition of effects; (21) have charge of portable armament for which he shall be responsible; (22) supervise and direct the mail service; (23) have under his orders the master at arms, his assistants, and the messmen for carrying out the duties of setting the tables and serving meals; (24) enlist civilians who apply for duty as cooks, bakers, barbers, and tailors—after seeing that they comply with the laws in force—and also take charge of their uniforms; (25) have under his care the address book of officers and subofficers; (26) keep up to date a list of personnel on leave, on duty out of the ship, in hospital, and overleave.

2. The material officer will (1) superintend the service of cleaning, upkeep, repairs, and painting of all material on board; (2) superintend and direct the cleaning and upkeep of all compartments of the ship and the material kept therein; (3) superintend and direct the cleaning and upkeep of the ship's boats; (4) direct the work of the divisions as concerns material; (5) make out lists of material for cleaning and painting and superintend the distribution and use of such material; (6) draw up the lists of supplies needed and of repairs which can not be made on board; (7) take charge of the handling of heavy weights, painting, docking and towing, and clearing ship for action, in accordance with orders which he may receive from the executive officer; (8) take charge of the forecastle on anchoring and getting underway; (9) take charge of care of anchor gear, moorings, and tow ropes; (10) submit weekly to the executive officer a written report of the cleanliness and upkeep of the different compartments of the ship, except double bottoms, armor spaces, air chambers, counter-mine spaces, tanks, and bunkers; (11) submit to the effective officer every two months a written report concerning the compartments and spaces specified in (10); (12) keep a confidential book in which will be entered suggestions made by officers concerning improvements to be made in the ship or in future ships; (13) direct those duties and services in action which are assigned to him by the "battle organization;" (14) in cases of emergency take charge of the duties which are assigned to him by the organization and by orders of the executive officer; (15) keep the "Book of requests for supplies," in which will be entered all requisitions made;

(16) verify the issue of supplies requested; (17) have under his charge: (*a*) the "Book of supplies from the naval depot," (*b*) the "Book of requests for repairs at the navy yard;" (18) the technical material in the different compartments and the powder magazines not included in the duties enumerated under headings (1), (2), and (4).

ART. 2. The duties of the executive officer will be those now defined by the regulations as altered by this decree.

ART. 3. The position of gunnery officer will be filled by a lieutenant commander.

AIRCRAFT CARRIERS, BRITISH.

Source: Reliable.

(5355–G)

October 1, 1921.

The converted aircraft carrier *Furious* has been in reserve for about two years, lying at anchor in the Firth of Forth. This vessel has been the subject of considerable discussion in the Admiralty as to whether she should be given a long refit or placed on the disposal list. It was recently ascertained from reliable authority that the Admiralty have decided to give this vessel an extensive overhaul, which will call for a number of major alterations in order that she might be a reasonably up-to-date aeroplane carrier. As previously reported by this office, H. M. S. *Furious* was not a success as an aeroplane carrier and was generally considered to be a failure so far as flying on was concerned.

During the past two years considerable experience has been gained on the *Eagle* and the *Argus*, and it is now proposed to take advantage of this experience and alter the *Furious* so that she will be a satisfactory aeroplane carrier. As a veil of secrecy covers all aeroplane carriers in the British Navy, it is extremely difficult to ascertain just what the major alterations are to be, but it is pretty definitely understood that these major alterations have been authorized and are under way at the present time. It is also understood that it will take from 12 to 18 months to make these alterations. The probable cost of the alterations and reconditioning of the vessel will be in the neighborhood of a million pounds and may be in excess of this figure.

It is believed that one of the major alterations will be the removal of the vertical smokestacks now above the flying deck and the installation of horizontal smokestacks underneath the flying deck, following, in general, the installation on the *Argus*, with such modifications as service experience has shown desirable.

The work is being undertaken by the Admiralty dockyard Rosyth, and if any excuse is necessary for the expenditure of this amount

of funds the Admiralty will probably take the attitude that they are giving employment to dockyard personnel rather than discharging this personnel, which discharge would augment the already large number of unemployed in Great Britain.

FRENCH NAVAL POLICY.

Source: Reliable.

(11900–A.)

15 September, 1921.

[French Naval Program for 1921.]

Construction of 3 light cruisers, 6 destroyers, 12 torpedo boats, 12 submarines.

Report made in the name of the Naval Board charged with the examination of the bill adopted by the Chamber of Deputies concerning abandonment of the construction of battleships of the Normandie type, transformation of the battleship *Bearn*, and laying down of light units, by M. Lemery, Senator.

I.

Gentlemen: When the naval budget for the fiscal year 1921 was submitted, the Senate, upon the proposal of its Finance Commission and through M. Henry Berenger, reporter, voted the separation of the 90,000,000 for the execution of the first work of the naval program.

This separation was accepted by the Chamber of Deputies. The reasons which our honorable colleague gave in justification of his proposition were the following: He reproached the Navy concerning new construction, without any firm decision having been come to concerning the characteristics and number of units to be constructed. Furthermore, whereas our naval power consists of three essential elements: surface fleet, submarine fleet, aerial fleet, the action of which has to be coordinated, insufficiently defined allotments.

Subsequently, the Government, having been called upon again to present the question of new construction to the Chamber of Deputies, the projects were discussed at the sittings of the 9th and 10th of June last and adopted without changes.

The procedure required by the Senate was therefore followed; the discussion was opened concerning the characteristics and number of units that the Navy proposed laying down. We will only remark that, contrary to the desire expressed by the Senate, aviation was again omitted in the provisions.

This remark having been made, what is the extension of the plans that have been submitted to you? They have not the pretension of constituting the naval program of victorious France the mission of

which is in future to assure the peace of Europe. It is, in fact, evident to all that the program of new construction of the French Navy can not be comprised in the voting of the laying down of 3 light cruisers, 6 destroyers, 12 torpedo boats, and 12 submarines, to which 3 other scout vessels and 24 submarines are to be added later.

Equally inexact would be the idea that it is a matter of a program of replacement. One can replace only what one possesses. But France has no other light cruisers than those which were delivered by the Germans, and she has no destroyers.

The truth is this is a matter of the construction of new ships, without which France would be brought to effacement on the sea. Under this head the plan presents a character of the greatest urgency, and your naval commission desires to proceed with its examination, convinced that the national interest requires that it be voted before the separation of the chambers.

What were the general ideas that dominated the work of your commission?

Gentlemen, three great powers are at present disputing the empire of the sea: England, the United States, and Japan. A comparison between the naval forces of these States and ours is no longer possible owing to the margin of formidable superiority which separates them. In this race of armaments, which precipitates the three nations we have just mentioned, toward the constitution of line squadrons armed with guns superior to the caliber of 343 mm. we possess on three of our ships, France has for the moment abandoned the struggle.

Furthermore, having no imperialistic objects in view, she is resolved to limit her military efforts to what is strictly necessary for her defense and for the honor of her flag. Now, whatever be the fluctuations of our politics in the future, our naval establishment should be able to fill two essential conditions, viz:

(1) To be at all times and in all places distinctly superior to German naval power;

(2) To possess the necessary supremacy in the Mediterranean to safeguard our interests in northern Africa and in the near Orient.

On the one hand it is a mystery for nobody that the idea of revenge—which is indispensable for the cohesion of German unity which the treaty of Versailles has so imprudently consecrated and forfeited—is carefully maintained in the masses of the German people. Germany would seek a new quarrel with us to-morrow were she to think herself capable of inflicting a defeat upon us. It is our force which is a guarantee of peace.

On the other hand it is necessary that we be constantly in a position to maintain our relations with our possessions in northern Africa and the Levant, which are powerful reserves of men, more

and more necessary, in view of the decrease of our birth rate. In case of war our naval power should permit us to draw without fear and without difficulty from these reserves.

Apart even from any hypothesis of war, it is a necessity for us, in a period such as this when the most dangerous propaganda agitates Mussulman populations, to command the respect of our subjects and protectorates by showing that in any case we shall be masters of our communications with them.

Thus two directive ideas present themselves: To have a naval power superior to that of Germany in the north, and strong enough in the Mediterranean for the objects defined above.

The German fleet.—According to article 181 of the peace treaty, the forces of the German fleet in armed ships shall not exceed the following: 6 battleships of the *Deutschland* or *Lothringen* type, 6 light cruisers, 12 destroyers, 12 torpedo boats.

They shall not comprise any submarine.

All other warships shall be placed in reserve or be assigned to commercial purposes.

In consequence of this article and the protocol which fixed the number of ships they can keep in reserve, the Germans have been authorized to retain:

(1) The 6 armed battleships.—*Schlesien*, *Braunschweig*, *Schleswig-Holstein*, *Elsass*, *Hanover*, *Hessen;*

(2) The 2 reserve battleships.—*Preussen*, *Lothringen;*

(3) The 6 light armed cruisers.—*Hamburg*, *Arkona*, *Berlin*, *Thetis*, *Medusa*, *Amazone;*

(4) The 2 light reserve cruisers.—*Niobe*, *Nymphe;*

(5) The 12 armed torpedo boats.—*T. 185*, *190*, *196; V. 2*, *3*, *5; S. 18*, *23; G. 7*, *8*, *10*, *11;*

(6) The 4 reserve torpedo boats: *S. 19; V. 6; T. 175*, *170;*

(7) The 12 small armed torpedo boats: *T. 99*, *101*, *102*, *103*, *104*, *105*, *106*, *107*, *108*, *109*, *110*, *113;*

(8) The 4 small reserve torpedo boats: *T. 85*, *86*, *88*, *89.*

Or, to sum up, 8 battleships; 16 torpedo boats; 16 small torpedo boats.

By virtue of article 190 of the peace treaty, Germany is forbidden to construct or purchase any warships other than those destined to replace the armed units above set forth.

Replacement vessels can not exceed the following tonnages: 10,000 tons for battleships, 6,000 tons for light cruisers, 800 tons for torpedo boats, 200 tons for small torpedo boats.

Except in the case of loss of a ship, the units of the different classes can be replaced only after a period of 20 years for battleships and cruisers, and 15 years for torpedo boats and small torpedo boats, this period to count from the date of launching of the ship.

Finally, according to article 191 of the peace conditions, the construction or purchase of any submarine vessel, even for commerce, is prohibited in Germany.

According to the dates of launching of their units (the eight battleships were launched—one in 1902, two in 1903, one in 1904, one in 1905, two in 1906—and the eight cruisers—two in 1899, three in 1900, three in 1903), and admitting that it requires about 36 months to construct a battleship and 30 months to construct a light cruiser, the Germans would have the right to lay down, in 1921, five battleships and eight light cruisers; in 1922, one battleship; in 1923, two battleships. They could thus replace all their battleships and cruisers before 1926. By adopting an increase of one-quarter to assure our superiority over the German fleet, we should therefore require at least 10 battleships, 10 cruisers, 20 torpedo boats and 20 small torpedo boats.

The restriction made by the peace treaty to the tonnage of warships that Germany can possess can but very indirectly influence the characteristics of our own ships, for if for certain types of ships, such as light cruisers, for instance, this leads us to the adoption of an acceptable type of the same class, this would not be the same for those in which, by the treaty, Germany is most handicapped, viz, destroyers and torpedo boats. It is to the standing of other foreign navies that we should then refer; and we are thus led to adopt types slightly superior to those which one day might be opposed to us.

But, thus limited, our power would be incomplete, for in war there are other objects to be attained than disabling the adverse fleet. There is the offensive against the enemy coast; the interdiction by blockade of the liberty of its communications by sea; the protection of the vicinity of our coasts and those of our colonial possessions and naval bases in our colonies; there is the protection of the liberty of our communications by sea; finally, offensive actions have to be undertaken against the communications of the enemy.

All this requires important supplementary forces comprising, for blockade purposes, sea-going submarines and mine-laying submarines; for the protection of the vicinity of our coasts and naval bases of our colonies, torpedo boats and sea-going submarines, medium submarines, rapid dispatch boats, and mine sweepers.

A certain number of these vessels can be requisitioned upon mobilization; others can be laid down, in accordance with the provisions of the plan of manufacture in time of war.

The fact nevertheless remains that we must be able already in time of peace to dispose of the necessary forces to energetically commence the combat from the first days of war.

Several members of your Naval Commission expressed the regret that the Government did not present the Chambers with a general

program established in accordance with the recent lessons of the great war. We do not know whether this program has been contemplated and drawn up by the Minister of Marine.

What is certain is that the state of finances of the country at present allows of only a modest effort, and the question placed is not to know whether the proposed construction is sufficient for the renewal of our navy, but whether is is indispensable for national defense. What we have just stated concerning the German fleet leads us to think that the construction of these ships should be taken in hand without further delay. How far stronger will be our demonstration when we consider the situation in the Mediterranean.

The situation in the Mediterranean.—Before the war, as is shown by the comparative tables of foreign and French naval powers in 1914, the French Navy occupied the fourth rank.

Since 1914 we have not constructed any warship. We are on the point of losing our rank. The magnificent activity displayed by our glorious Italian friends is an example for us, and at the same time constitutes a reproach to our passivity. Without doubt as far as concerns large units the situation has not changed much since 1914.

Battleships.—Our neighbors and friends dispose of nine battleships; five of 20,000 to 24,000 tons—*Andrea Doria*, *Caio Duilio*, *Conte di Cavour*, *Giullio Cesare*, *Dante Alighieri*—and four ships of 12,000 tons of the *Roma* type.

We possess seven battleships of 23,000 tons—*Lorraine*, *Provence*, *Bretagne*, *France*, *Paris*, *Jean-Bart*, *Courbet*—and three of 18,000 tons—*Voltaire*, *Diderot*, *Condorcet*. Italy does not manifest the desire to complete the construction of the *Caracciolo* of 32,000 tons, and one of the objects of the present plan is to stop the construction of our battleships of the *Normandie* type.

Protected cruisers.—Without doubt comparison is still favorable to us as far as protected cruisers, regarding which there are, moreover, the same reserves regarding their use in modern warfare as apply to battleships.

On the Italian side, three ships of this type, displacing 14,000 tons, the *San Giorgio*, *Pisa*, and *San Marco*, constructed 10 or 12 years ago and armed with four 254 mm., eight 190 mm. guns, and three torpedo tubes.

On the French side, six protected cruisers, three of which have about the same age as the Italian ships of the same type—the *Waldeck Rousseau*, *Edgar Quinet*, and *Ernest Renan*—and three older ships and of almost no naval value—the *Jules Michelet*, *Victor Hugo*, and *Jules Ferry*. But our inferiority is evident in light cruisers, destroyers, and torpedo boats, and our rapid fleet does not bear comparison with that of our great friends of the Mediterranean basin.

Light cruisers.—Italy, in fact, possesses not less than nine light cruisers—five ex-enemy transformed cruisers of 3,450 to 4,900 tons, built in 1911 to 1914, having a radius of action of 3,700 to 6,000 miles, and four cruisers which date from 1911 and 1912—the *Quarto*, *Nino Bixio*, *Marsala*, and *Libia*, displacing from 3,300 to 4,300 tons and running generally at 28 knots, except the *Libia*, 22 knots.

Now, up to the present we have not constructed any light cruisers, and we possess at this moment only the four transformed German cruisers and one Austrian cruiser—*Metz*, *Strasbourg*, *Mulhouse*, *Colmar*, *Thionville*, of 3,450 to 4,900 tons and built in 1908 to 1915. The four German cruisers are armed with six to eight 15-cm. guns; the *Thionville* with nine 105-mm. guns. They have two to four torpedo tubes. Their radius of action is 3,700 to 6,000 miles.

In providing for the construction of three light cruisers, which thus brings the units of this type up to eight, the Government takes into account the state of finance and asks Parliament only for what is strictly necessary to keep our rank in the Mediterranean. Further, we will state on the rôle of these ships and the services to be expected of them.

Destroyers.—As to the flotilla-leader type, to which our General Staff gives the name of destroyers, the inferiority of France is yet more evident. We have, in fact, never built any of this type of ship which during the war played one of the most important rôles. The only destroyer we possess, the *Amiral Senes*, is an ex-German ship.

On the contrary, the Italians have quite a remarkable fleet of flotilla leaders. In addition to an ex-German ship similar to ours, they possess four destroyers dating from 1916 and 1919, displacing 1,780 to 1,900 tons, and which can make 34 to 40 knots; furthermore, five ships of the *Leone* type of 2,000 tons, which can make 30 knots, with a radius of action of 1,200 miles, armed with eight 120-mm. guns, are about to be commissioned. Two other units are under construction, making a total of 10 flotilla leaders, remarkably conceived, and which constitute a fleet of the highest interest in the Mediterranean.

We must repeat that on the French side there are none of this type of ship.

We can not too severely judge this abandonment of our naval power, and the fact that our naval construction has not yet built one ship which answers the navigating and naval qualities of flotilla leaders. Your Commission considers that the Government should be granted the six destroyers it demands; that is a strict minimum below which we can not go.

Torpedo boats.—Not even the French torpedo-boat flotilla can be compared with the Italian, since we possess 42 units of this type as against 54 Italian. Certain recent incidents have proved that our torpedo boats, worn by intensive war service, are no longer capable

of performing the missions assigned to them. Three of them were disabled in the Mediterranean during the month of April. The construction of 12 torpedo boats asked for by the state of our finances will soon permit us to commence the replacement of worn units, at the same time increasing the strength of our fleet.

Submarine fleet.—Are we better armed as regards submarines? We possess 49; our Italian friends have 50. But we must consider that of the 49 which compose our fleet, 15 will have to be placed out of commission by 1925 as being worn and obsolete. The plan providing for 12 submarines does not even fill the gaps which will be caused by these being placed out of commission.

Therefore, the necessity of maintaining, on the contrary, of Germany, a naval power such that, even insuring the guarding of the Mediterranean, we could hold her forces in respect; the legitimate care of not declining on the morrow of a dearly bought victory, from a rank we occupied in the world as a naval power, make it a necessity for us to consider without delay the construction of new units. What are those worth that are proposed us?

II.

The characteristics of surface ships of which the construction is contemplated.—The plan under discussion provides the laying down of 3 scout cruisers, 6 destroyers, 12 torpedo boats, and 12 submarines.

The following table shows the characteristics provided for the surface ships:

	Scout cruisers of 3,000 tons.	Destroyers [1] of 2,400 tons.	Torpedo boats of 1,400 tons.
Normal displacement	7,990	2,573	1,475.
Deep-loaded displacement	9,075	2,710	
Number of boilers	8	5	3.
Horsepower	96,000	48,000	30,000.
Speed with normal displacement (knots).	34	35.5	32.5.
Normal fuel (tons)	500	250	165.
Maximum fuel (total)	1,500	540	165.
Radius of action	880 at 34 knots	2,500 at 18 knots	3,000 at 15 knots.
Antiaircraft guns	8 15-cm.; 4 75-cm	6 12-cm.; 2 75-cm	4 13-cm., 150 rounds; 2 75-cm.
Torpedoes	4 triple 550-mm. tubes on deck.	2 triple 550-mm. tubes.	2 double 550-mm. tubes.
Searchlights	3 120-mm	2 90-mm	2 75-mm.
Crew (petty officers, and men)	492	206	140.

[1] The French plan provides for two propellers, each using about 24,000 horsepower. This is also the unitary power of the four lines of shafts of the scout cruiser, so that the same plan of engine can be applied to all these installations, according to a principle which has been adopted in England, and, it appears, is also in favor in the United States.

What is the present situation of the plans of these ships? The question was placed by a member of your Commission during the examination of the project.

The following information has been furnished by the Ministry of Marine:

(*a*) The preliminary plan for the cruisers of 8,000 tons is completed and will be forwarded by the Minister to the technical board for examination.

(*b*) The preliminary plan for the destroyers of 2,400 tons was discussed by the technical board at its sitting of 16 April, 1921. The retouches demanded were complied with, and the definite solution concerning the distribution of the six 13-cm. guns is at present submitted for the approval of the Minister.

(*c*) The preliminary plan for the torpedo boats of 1,400 tons is in course of preparation.

(*d*) The plans for the deep sea-going submarines were terminated in 1920 and approved by the technical committee in July of the same year.

After giving these precisions we may ask to what naval requirements the types of ships provided by the project correspond.

Cruisers of 8,000 tons.—The lessons of the war show that all the belligerents were constantly short of cruisers—that is to say, rapid and indispensable sea-going ships:

(*a*) For the protection of commerce against corsairs, these ships should be recruited amongst liners or cargo vessels of good speed. In order to overtake and destroy them before they have caused too great damage, we must have a rapid type of vessel, maintaining its speed even in heavy seas and having a radius of action sufficient to allow of a cruise of some length. To combine these three conditions a sufficiently high tonnage is necessary.

(*b*) For scouting liaison with aerial apparatus. The problem of dispatching a seaplane from a vessel can be considered as solved; that of its return on board is not yet so, except on special vessels.

Without denying the value of the seaplane, it is not possible to rely exclusively on it for scouting for squadrons. Similarly, a dirigible does not solve the problem in all cases. The use of airships, in general, requires certain conditions of place and of atmospheric conditions which are not always met with. It is thus that, notwithstanding the relative proximity from the scene of battle, dirigibles were, on account of unfavorable weather, of no use at the battle of Jutland. In order to be certain of a good scout service at all times and at all places it is necessary to utilize judiciously all the means of information available—submarines, destroyers, torpedo boats, cruisers, airships, etc.

(*c*) For the support of torpedo-boat flotillas. During a charge the cruisers would have to protect the torpedo-boat flotillas or torpedo boats against the attacks of light enemy cruisers. They should

also assist these flotillas in action, as was the case at the battle of Jutland in artillery duels with similar enemies.

The Navy is reproached with the changes made in the various programs and the diversity of the terms used for cruisers. The following explanations have been furnished us:

These ships have as origin squadron scouts, provided in statement "A" annexed to the law of March 30, 1912.

At that time all large navies possessed or constructed ships of 4,000 to 5,000 tons destined for scouting for squadrons and for the protection or attack of commercial convoys.

For these essential duties France alone had only a few old units without sufficient speed with respect to squadrons. It was this deficiency that the project of 1912 seeked to cover.

The term "scout cruiser" corresponded to the English term "scout" and better defined their rôle than the vague term of "cruiser."

But the war placed in evidence the extreme variety of missions devolved on these ships and which we have enumerated above.

The term "scout" now appears too special, and all the powers have returned to the general term of cruiser. Sometimes the epithet "light" is added, not to specify that the tonnage of these ships is small, but as a simple opposition to the denomination "battle cruiser," reserved to ships of high power, carrying the same arms as the largest battleships, exceeding them sometimes in tonnage, and always in speed, but less well protected.

The project of 1912 provided for our six so-called scouts a tonnage equivalent to that adopted by foreign powers. But during the war the immensity of the field of action of these ships and the increase in caliber of guns placed on board inferior units or even on armed liners led to increasing their tonnage to give them a greater radius of action, more powerful ordnance, and more protection. France only followed in this route the example of Italy, which laid down cruisers of 7,000 tons.

The United States have under construction scout cruisers, at first of 7,000 tons and 8 guns, increased to 7,500 tons, and 12 guns and carrying perhaps 4 seaplanes.

Germany is authorized to replace her cruisers of 6,000 tons aged over 20 years. In providing 8,000 tons for our cruisers of the 1921 program we shall remain below the 9,500 tons adopted by the English, but we shall preserve over Germany the strictly indispensable margin.

To sum up, our 8,000-ton cruisers will enable us—

(1) To furnish our eventual allies an additional value equivalent to that of their ships of the same type.

(2) To oppose units capable of mastering the possible enemy.

It is in this spirit that, in accordance with the opinion of the General Staff, M. Landry increased the tonnage of the cruisers provided in M. Leygues' program.

Destroyers.—As already stated, these ships are known in England as "flotilla leaders." We have no ship of this type except the *Amiral Senes*, ex-German *S-116*.

The flotilla leaders played a primordial rôle during the war. They were employed above all as chiefs of torpedo-boat groups.

It is this type of ship which, during an action, gives the torpedo boats the elements for the fire control of the gun and torpedoes.

At the moment of a charge it forces back the attack of enemy torpedo boats and supports that of our own. These ships have likewise been employed in small groups, which, even numerically inferior to torpedo-boat divisions, were superior to them in power. Thus, in March, 1917, two flotilla leaders, *Broke* and *Swift*, patroling in the Channel, met a division of five German torpedo boats, sank two and put the others to flight.

Those it is proposed to construct will have a displacement of 7,400 tons.

The continual increase of tonnage, speeds, and sea-going qualities of squadrons has led to the parallel increase of the units of minimum size destined to cooperate with them.

It is thus that the 300-ton destroyers of about 1900 were usually able to hold the sea with battleships of the *Saint Louis* type. These destroyers, even though not worn, could not cooperate in this manner with present battleships of 25,000 tons, which now require torpedo boats of about 1,400 tons.

These ships, which are indispensable to serve as guides and supports to squadron torpedo-boat flotillas, do not yet exist in France (except the *Amiral Senes*, ex-German *S. 116*). Their indispensable rôle is explained above in detail. It is therefore not a case of changes to an anterior state of things, but a real innovation, the utility of which no longer requires proving.

During the war our torpedo boats of 800 tons, detached to Brindisi and Dunkerque, were placed under the orders of the English flotilla leaders or Italian ships of the *Mirabello*, *Aquila*, etc., type.

Torpedo boats.—During the last war the torpedo boat, in addition to its rôle of firing torpedoes, was used for reconnaissance, patrol, escort duties, submarine chasing, and even land operations. All the navies complained of never having enough torpedo boats (see Admiral Bacon's book, "The Dover Patrol").

The great inferiority of the French Navy in this respect has led the naval board and parliamentary reporters to provide for the laying down of 12 ships of this type.

Submarines.—Our geographical situation and the necessity of obtaining at equal expense the greatest number possible of submarines obliges us to provide for two types of submarines—deep-sea-going submarines with a radius of action of 700 to 1,200 miles on the surface, 100 miles submerged, and able to hold the sea for a considerable length of time; and coastwise-going submarines of 2,000 to 2,500 miles on the surface, 100 miles submerged, and one-half in number of the preceding, which allows of having about double at equal cost.

The use of deep-sea-going submarines is for operations in the open sea, the pursuit of enemy commerce, corsairs, light cruisers, and cruisers of the enemy. Some will be armed as mine layers. Exceptionally their duties will be the attacking of enemy corsairs in such zones where the mastery of the sea is not absolutely assured us (eastern Mediterranean, for instance). It is this class of submarines with which we are least well provided (10 only, including 5 ex-German).

The coastwise sea-going submarines will especially be used in the North Sea and western Mediterranean and for the defense of our coasts and bases. They will insure near blockades and survey the vicinity of ports in which enemy naval forces may have taken refuge. They can also serve as countersubmarines and forcers of blockades. Some are intended, like the deep-sea-going submarines, to be fitted as mine layers.

The experience of the war proves that the submarine is a more than important arm—it is essential. It is, therefore, astonishing that project No. 171, presented by M. Leygues and in accordance with the proceedings of the naval board, did not provide for the laying down of any vessel of this type.

The navy denies having ever failed to recognize the capital importance of this arm. It states that it only intended to direct its first effort toward the units that were totally lacking. However this may be, M. Landry added to the program of his predecessor the construction of 12 submarines; M. de Kerguezec, in his report No. 1996, asked that the figure be raised to 36. This plan was in general adopted, but it was mutually agreed between the commissions and the Minister that the program submitted to Parliament should comprise only the number that could at present be given to the navy yards—viz, 12 submarines.

All navies agree in providing in their plans the two types of submarines we have mentioned—the deep-sea-going submarine between 1,000 and 1,100 tons and the second, intended for operations in small seas and having about 550 tons.

The German U's had 850 tons; they remained at sea for 25 to 30 days; the English L's have 890 tons; the American V's, 2,000 tons.

The German UB's had 530 tons; they remained at sea for 15 to 20 days; the English H's have 360 tons; the Snapish R's, 450 tons.

The deep-sea-going submarine proposed has been planned for a radius of action of 7,000 miles on surface at 9 knots. It will be able to remain 30 days at sea. Its characteristics are as follows: Surface displacement, 1,100 tons; submerged displacement, 1,410 tons; power, on surface, two 1,450 horsepower; power, submerged, two 950 horsepower; surface speed, 16 knots; submerged speed, 10 knots; radius of action at 9 knots on surface, 7,000 miles; radius of action at 5 knots submerged, 105 miles; forward 550-mm. torpedo tubes, 4; rear 550-mm. topedo tubes, 2; lateral 500-mm. torpedo tubes, 4; reserve torpedoes, 6; guns, one 100-mm.; machine guns, 2; time for submerging, 30 seconds; depth of submersion 80 meters; total complement 48.

As will be seen from the above two tables, the time for filling the ballast tanks for the large as well as for the small submarine, is calculated at 30 seconds, which places us well in advance over present submarines in France and of foreign navies. The present French submarines afloat which dive most rapidly take 1 minute 10 seconds to 1 minute 30 seconds (*Fulton*, 1 minute 9 seconds; *Joersel*, 1 minute 25 seconds). The German submarines took 1 minute 5 seconds to 1 minute 20 seconds. The English L type takes 1 minute 10 seconds, those of the K type, 4 minutes, to submerge. The American R type take 1 minute 15 seconds to 1 minute 30 seconds; those of the V type take 1 minute.

The time for filling the ballast tanks being fixed at 30 seconds for the French submarines proposed, it is thought that these vessels will take from 40 to 45 seconds to plunge.

Submarines and submersibles.—The question was placed by a member of your naval commission as to why the General Staff did not consider the construction of submersibles.

The two expressions "submarines" and "submersibles" were used at the beginning of submarine navigation to define submarines of small buoyancy and those of great buoyancy. This distinction is at this moment necessary because all the submarines constructed being of small tonnage, it was necessary to give those for deep-sea-going duties a buoyancy which would permit them to hold the sea in all weather.

The tonnage of submarines having considerably increased owing to the increasing naval qualities expected of them, all submarines can now hold the sea in all weather. There was therefore no longer any necessity to consider the two types in the above-mentioned limits—defensive submarine of small buoyancy and offensive submersible of great buoyancy.

All our submarines are offensive. It became necessary to reduce the buoyancy, which has decreased 30 to 20 per cent in order to reduce the time required to plunge. Great buoyancy (the English K's, for example) is incompatible with rapid plunging. This characteristic can correspond only to a squadron submarine of great surface speed. The Minister of Marine states that this type is undergoing preliminary consideration. However that may be, it is to be remarked that, excepting the types of submarines constructed for a well-defined object, all the navies give their submarines a buoyancy of 20 per cent.

Use of fuel oil on board ships of the new naval program.—All the ships of the new naval program are planned to use fuel oil. We might ask what are the reasons that have caused the adoption of fuel oil by a nation like France, which is entirely dependent on other nations for the supply of this kind of fuel.

In reality the use of liquid fuel is absolutely imperative for ships of which the power is high, and of the order of 50,000 and even 100,000 horsepower, as for the destroyers and cruisers of the new naval program.

The chief reasons which render the use of this fuel absolutely necessary are as follows:

(1) The calorific power of fuel oil being higher than that of coal, it would be necessary to take on board a lesser load for a same radius of action, which amounts to saying that a vessel of a fixed displacement would have a greater radius of action if it uses fuel oil than if it uses coal.

(2) The time required to take fuel oil on board is infinitely less than that for coal.

The dead time suffered by a vessel using fuel oil as compared with that for coal being less considerable, the number of ships available for naval operations is greater.

(3) The stowing of fuel oil in tanks is much easier than filling bunkers with coal: fuel oil can be stowed in the double bottoms of ships, where it would be impossible to stow coal; this therefore leaves space that can be utilized by other installations on board.

(4) The handling of fuel oil on board is incomparably easier than that of coal.

(5) Firing with coal for high speeds causes a heavy strain on the personnel and can not be maintained for any great length of time. It requires a numerous personnel.

(6) Oil fuel avoids the formation of a volume of ashes, the removal of which in the case of coal necessitates a further increase in personnel.

(7) For ships of high speed the use of boilers using fuel oil allows of realizing a determined naval program by ships of which the displacement is very much less.

A boiler using fuel oil, with given equal horizontal dimensions, produces a greater quantity of steam than a boiler using coal.

Discontinuance of the construction of the five battleships of the "Normandie" type—transformation of the "Bearn."—The bill submitted to you comprises, likewise, the discontinuance of the construction of the five battleships of the *Normandie* type and the transformation of one of them, the *Bearn*, into an aircraft carrier.

Concerning the discontinuance of the battleships, the construction of which had been authorized by the laws of 30 July, 1913, and 9 January, 1914, it is generally believed that the sacrifices which the completion of these ships would require does not correspond to the interest which their placing in commission would present. It is estimated, in fact, that it would be necessary to expend about 430,000,000 francs to complete these five battleships according to the original plans. Now, whatever be the changes made in these plans, these ships would be absolutely inferior to all foreign battleships at present in commission and launched since 1914. It is certainly regretable to have expended 166,000,000 on these ships, but it is better to lose these 166,000,000 than to expend another 430,000,000 without necessity.

Finally, it was proposed to transform the *Bearn* into an aircraft carrier. This would cost 60,000,000, which, added to the 15,000,000 expended on the hull of the *Bearn*, would give a total of 75,000,000. We think that this expenditure is necessary. I have no need to bear on the importance of naval aviation. Now we have no aircraft carriers, whereas all navies possess some, and the transformation of the *Bearn* appears to us to be the best solution to furnish our aviators as soon as possible with the training ship they require for their exercises.

Admiral Guepratte, who at first opposed the transformation of the *Bearn*, very loyally admitted at the sitting of 10 June that he had changed his opinion concerning this question and that he was a partisan of the plan of the Government. We, therefore, consider that this work should be taken in hand without delay for the development of our naval aviation.

III.

The financial effort—The question of navy yards.—The execution of the first part of the program just discussed will require, according to the supplementary report by M. Paul Denise to the Chamber

of Deputies, an approximative expenditure of 738,000,000. The total final program will require an expenditure estimated at 1,416,000,000, which is of course only approximate, as the expenditures may vary according to the cost of raw material.

The 738,000,000 just mentioned would be distributed as follows:

(1) 3 light cruisers of 7,800 to 8,000 tons, at 70,000,000 each	210, 000, 000
(2) 6 destroyers, at 22,000,000	132, 000, 000
(3) 12 torpedo boats, at 14,000,000	168, 000. 000
(4) 12 submarines, at 14,000,000	166, 000, 000
(5) 1 aircraft carrier	60, 000, 000
Total	738, 000. 000

This evidently means a heavy sacrifice, but it will be possible, if Parliament so requires, to recuperate a great part of the allotments for new construction by economies realized in the shore departments. M. Henry Berenger, in the remarkable reports he made in the name of your commission on finance concerning the naval appropriations for the navy of 1920 and 1921, strongly opposed the abusive expenditures of the navy yards. These require most urgent and radical reform. We therefore think it necessary, when voting the allotments for new construction, to insist that the passing of the naval program be followed by a plan of reform of the navy yards. As stated by our colleague, "this problem of the utilizing of navy yards eminently concerns the proper use of the finances of the Government, and the Chambers are awaiting the solution since the close of hostilities." Referring to the disequilibrium between the industrial expenditures and the naval expenditures in the navy, M. Henry Berenger produced impressioning figures concerning the disproportion that exists between these two kinds of expenditures. Whereas in a proper budget all the appropriations should be allotted to the fleet, we remark that 60,000,000 are allotted to general administrative expenditures common to all the services, and 600,000,000 to industrial expenditures as against 572,000,000 to the total naval expenditures. The department of naval construction figures alone for 450,000,000 in the above amount of 600,000,000. The workmen's salaries, which amount to 172,000,000 added to the salaries of navy yard personnel, 36,000,000, exceed by 20 per cent the amount of the expenditures necessitate by the corps of officers and crews together.

The exaggeration of these expenditures is due to the fact that we possess too many navy yards. With three construction yards, Danzig, Wilhelmhafen, and Kiel, and a total of 23,000 workmen, in 1914 Germany was able to raise the formidable naval power which nearly held England itself in check. As regards England, she possessed in 1914 only six navy yards; two of these, Pembroke and Hautbowline,

are to be abolished, and the force of laborers reduced to 43,000, as before the war.

Finally, Italy, the navy of which is comparable to ours, in 1914 possessed five navy yards, employing 14,000 workmen—Naples, Venice, and Castellamare have in general been abolished. There therefore remains only two navy yards and one station—Pola; 10,000 workmen have been discharged. How, therefore, can France support the weight of six navy yards and three establishments outside of the ports? The number of laborers still amounts to 33,500, according to the budget of 1920, or 1,000 more than before the war. In 1921 salaries are sensibly higher and from 150,000,000 have risen to 175,-000,000. The number of workmen has been reduced, but this reform is insufficient. It is not only the salaries of workmen that are the source of considerable expenditures but the maintenance of useless establishments. The only manner of solving the problem of the navy yards consists in the abolition of those that are of no use. Some navy yards have been abolished in general. Will the naval program cause their renewal again?

Why should private industry not receive a large part of the vessels it is proposed to construct?

If it is well that the navy should retain sufficient navy yards to keep up the science of its engineers in order to be able to make comparisons with industrial prices and not to be in dependency of the latter, is it not necessary to rid our budgets of all these general expenditures for shops, administration, maintenance, and management, under the burden of which our country is weighed down? Has it not been proved that the cost price of construction in navy yards is sensibly higher than that of private industry? We are of the opinion that it is to the very great interest of the country to preserve private building yards which are able to undertake naval construction. It is necessary to preserve their force of specialized personnel and to train this personnel. In case of war we should be in a position to construct submarines by hundreds. We do not understand why the French navy should maintain its ostracism toward private yards for orders of this type of vessel.

To these remarks may we add a few more general considerations? France has become a metallurgical power of the first rank since the addition of the Alsacia-Lorraine mining basin. Now, before the war the industry of naval construction in general, and especially the construction of warships, was a very important branch of our industrial activity. The French yards were in favor by foreign nations for the finish they gave, particularly in the construction of warships and liners. As is known, there exists a very great similar-

ity of construction, at least as concerns engines and boilers, between the naval units and rapid units of the merchant marine.

At the present hour we have 20 naval building yards in France, the share capital of which amounts to 272 millions at the rate of before the war, not including the issue of bonds. Of these 20 yards one-half can undertake simultaneously the construction of merchant ships and warships. They formerly had regular customers in the whole world. How can we expect foreigners to apply to our yards when we entrust them with no orders ourselves?

On the other hand, it was announced in the Chamber of Deputies, at the sitting of 10 June, that 8,000 to 10,000 workmen were to be dismissed if our private yards received no orders. This social consequence should all the more occupy our attention, since the navy caused these yards serious competition by undertaking construction for the merchant marine, thus, considering the present crisis, taking away the few orders on which they could count, and which the Navy executed in their stead on onerous conditions for the treasury, which had to dispose of the ships constructed at a loss.

We therefore count on the voting of the present bill being immediately followed by a thorough reformation of our navy yards and the liquidation of those which have for so long been found of no service. Your commission proposes that you add a provision to the bill under discussion to realize this reformation.

It is in consideration of these remarks that we request you to pass the present bill.

BILL.

Article 1. The construction of the battleships Nos. 7, 8, 9, 10, and 11 (*Normandie*, *Languedoc*, *Gascogne*, *Flandre*, and *Bearn*), the laying down of which was authorized by the laws of 30 July, 1913, and 9 January, 1914, stopped by the events of the war, will not be resumed.

The Minister of Marine will proceed with the disposal of the elements already received or constructed or their transformation or new destination to the interest of the Government.

Article 2. The Minister of Marine is authorized, first, to lay down during the year 1921, (1) 3 scout cruisers (squadron scouts or light cruisers) as provided in statement A annexed to the law of 30 March, 1912; (2) 6 destroyers; (3) 12 torpedo boats; (4) 12 submarines.

Secondly, to effect the transformation of the hull of the *Bearn* into an aircraft carrier.

Article 3. The above-mentioned constructions shall be distributed amongst at most three navy yards.

JAPAN-GERMANY; INTRIGUES.

Source: Reliable.

(13324-C.)

9 September, 1921.

The following report treats of the Japanese organization of the Pacific Islands, the German intrigues in Japan, the Japanese petroleum problem, Japanese effectives in Manchuria, and their revision of military training.

About a dozen German officers, all technical men, arrived in Japan during the month of June, having traveled via the United States. They were furnished with Finnish, Esthonian, and Lettish passports. The turbine engines of the latest types of Japanese battleships are being installed by two German engineers especially engaged by the Japanese Navy.

The Organization of the Pacific Islands.

The Japanese are undertaking various organizational measures in the former German islands in the Pacific. Wireless stations have been installed at Auguai, Saipan, Padan, and Galuet in the Marianne Islands; Wodge in the Marshall Islands; and Pouape and Truck in the Caroline Islands. An examination is under way regarding the advisability of creating naval bases at Truck and Wotge. Important coal stations have been erected at Truck and Pouape. Finally, the Japanese are about to strengthen to a considerable extent the defenses of the Bonin Islands, located on the Marianne-Yokohama route. The first credit of 1,800,000 yen has been appropriated for the erection of works to bear long-range guns, two seaplane bases, and one base for submarines. The armament of the Rionkiou Islands will be renewed, 12-inch guns and mortars being added.

German Intrigues in Japan.

The Germans in the Far East are exerting themselves to the utmost to stir up things. They affect a strong interest in the Semenoff undertaking, and have launched a press campaign in Japan in furtherance of a Japanese-German-Russian alliance, taking in perhaps China also. Japanese officers have been noticed at Tchita negotiating with the Red Government for the cession of the Island of Saghalin and for the constitution of Vladivostok as a free port in exchange for the Japanese evacuation of the maritime Provinces.

The Petroleum Problem.

In 1919 Japan consumed 4,500,000 hectoliters of petroleum, of which 3,000,000 were consumed by her fleet. The annual requirements in time of war would be 50,000,000 hectoliters. But Japan produced only 3,600,000 hectoliters during 1919; the importations come for the greater part from Borneo. The Japanese Government is seeking for new oil sources owned by herself. This explains her

desire to stretch her authority over the whole island of Saghalin, producing friction with the Soviet Government.

BRITISH OPINION OF THE ANGLO-JAPANESE ALLIANCE AND THE WASHINGTON CONFERENCE.

Source: The Librarian, U. S. Naval War College.

(14865.)

SPEECH BY PREMIER HUGHES OF AUSTRALIA:

Obvious that Anglo-Japanese Treaty be renewed, but should be modified, not only to suit Australia but America. Treaty is a powerful agency for peace and for limitation armaments. Naval rivalry in the Pacific very dangerous.—*London Times*, May 24, 1921.

THE NAVAL POLICY BRITAIN NEEDS TO-DAY.

[By Lieut. Commander J. M. KENWORTHY.]

"We are opposed by two great naval powers—Japan and the United States. To those who plead that there is an Anglo-Japanese treaty, the history of the just-completed war between Italy and Austria in spite of their alliance should furnish an answer. The simple old rule of looking upon any Navy under a foreign flag as a dire menace is therefore adopted. Is war with the United States conceivable? There are two possible causes at the moment. Both depend on the policy we pursue—Ireland and oil."—*Review of Reviews*, March, April, 1921.

JAPAN AND THE POWERS.

[By JOHN LEYLAND.]

"It may not be possible for the United States to go far without encountering both the ambitions and the practical needs of Japan. Our position at the Conference will be that of throwing all our influence into the scale to attain a settlement. We shall be there as the friends of the United States and the allies of Japan. Both the friendship and the alliance must be maintained. The more closely the position is examined the more clearly will it be seen that the chief though not the only problem of the Pacific is centered in the financial and political disruption of China. Advocates of the 'open door' and of 'equal opportunity' should realize that the application of these principles will raise questions of exceeding complexity and far-reaching import."—*Nineteenth Century*, September, 1921.

FROM NORTH SEA TO PACIFIC: THE NEW NAVAL PROBLEM.

[By Archibald Hurd.]

"Naval policy and foreign policy are interdependent, as Mr. Hughes has admitted in his forecast of the course which he intends to pursue at the forthcoming meeting of the Prime Ministers of the Empire. The advisability of renewing the Anglo-Japanese Treaty will then be discussed. The bearing of this question upon the naval defense of British interests in the Pacific is obvious, and the Prime Minister of Australian Commonwealth, recognizing the interdependence of naval policy and foreign policy, has announced that he will strive at the Conference for a renewal of the Anglo-Japanese Treaty in some such form as shall be deemed proper, as will be acceptable to Britain, to America, to Japan, and to ourselves."

"'It may be said that this is impossible. It may be so; I do not think it is impossible. When it comes to the alleged causes of disputes between Japan and America these differences appear to be trivial compared with the tremendous evil which war would inflict upon both nations.'" * * *

It appears certain in these circumstances that a new treaty of friendship between the British Empire on the one hand, and Japan on the other, will be concluded in a form which should commend itself to the good sense of the people of the United States. This instrument, wisely framed and interpreted, may not only tend to preserve peace in the Pacific but will govern the scale of naval armaments to be supported by the British peoples in the vast sea area. As the Pacific is destined to become the cockpit of world policy, and as the British Empire is predominantly a Pacific empire, the British peoples can not afford to continue to be unrepresented by adequate naval forces.—*Fortnightly Review*, June, 1921.

AUSTRALIA FOR THE WHITE MAN.

[By C. Freeman Murray.]

"For Great Britain now is confronted not only with such claims to expansion as may be made by a nation which is outside the Imperial Bond, but to which—in the case, for example, of Japan—she owes treaty obligations."

OUR FOREIGN POLICY.

[By W. Ormsby Gore (Member of Parliament).]

"The Anglo-Japanese Treaty does not have to be renewed. It continues automatically from year to year unless it is denounced or modified. It is important to remember that there is a big difference

between making a new alliance and denouncing one that exists. If we denounce it we shall have to give good reasons to a high-spirited and sensitive empire of 65,000,000 for our doing so. To denounce the Alliance would be to throw Japan into isolation, and it is more than doubtful whether this would make for the peace of the world. * * * The Treaty has had the effect of confirming Japan in her claim to be regarded as a first-class power. Statesmanship of the very highest and most courageous order is required to cut the Gordian knot, and the redrafting of the Anglo-Japanese Treaty presents the opportunity to our foreign office to take the lead in this great task and to secure the real restoration of China with the assent and cooperation of both America and Japan. Between Japan, America, and the British Dominions, whose shores are washed by the Pacific Ocean, there is growing up a triangle of fear. The Japanese themselves are not exactly pleased with their performances in China, and probably their best defense is that they have merely followed European example—in this case, bad example. What is wanted is a radical alteration of our Chinese policy. Above all, let us avoid in the discussion of our policy in the Pacific hole-and-corner arrangements with America or China. Let all cards be thrown upon the table and let the problem be treated as a whole in the full light of day. The Japanese, the Chinese, and the Americans are all suffering from sensitiveness and suspicion. A League of Nations embracing all peoples is our goal, but we can only reach that goal by stages of slow growth and patient experiment, avoiding the twin dangers of attempting too much or trying too little. Had America been willing to give the machinery of the League a trial it might have been possible to have brought the whole question of the Pacific before the Assembly of the League at a meeting specially convened for this purpose, where every aspect of the problem could have been discussed. But with America out this is not possible. It therefore becomes necessary to attempt the fundamental objects of the League in other ways—viz, the removal of causes which may lead to war. It is the business of the statesmanship of the world to rise to a great occasion and to remove from the Far East and the Far West the threat of another impending calamity. The future relations between America and the British Empire are passing through a critical stage. Colonel Harvey's recent speech in London gives us new hopes, but such hopes will be dashed to pieces unless the Japanese question and the questions raised by the American Government in connection with mandates are approached both by Britain and America in a more open and comprehending manner. The replies of Lord Curzon to the successive American notes regarding oil rights in mandated territories may be able documents, but their tone and the 'tu quoques' are hardly such as to remove the uneasiness caused by similar tone

of the American notes. . . . Suspicion has grown in consequence, and American opinion has come to the conclusion that the Powers selected to exercise mandates are up to some 'ramp.' There never was a case where open diplomacy had so much to gain and secret diplomacy so much to lose. We have backed the losing horse and backed it heavily. In these circumstances is it too much that our Dominion premiers who are to be asked to consider the Anglo-Japanese Treaty at the coming conference will insist on the public discussion of this item on their agenda, and will ask to hear the American and the Chinese views before committing the Empire to any decision?"—*Nineteenth Century*, June, 1921.

THE ANGLO-JAPANESE ALLIANCE.

[By Robert Young.]

While it failed to achieve any one of the objects for which it was avowedly designed, the Anglo-Japanese Alliance has aroused the deepest resentment in China and intense suspicion in America. It is the cause of much of the ill-feeling that prevails between China and Japan. It is antagonistic to the whole scheme of the League of Nations, for an alliance within the League is an anachronism that can only have a prejudicial effect on the whole conception of the Covenant. The militarists of Japan and of Britain, supported by their respective foreign offices, favor the Alliance, for it carries out the unexpressed objects for which it was framed. But the agreement is wholly against the real interests of the British and Japanese peoples, which consist in the establishment of good relations and friendship with all nations.—*Contemporary Review*, July, 1921.

SEA POWER IN THE PACIFIC.

[By David Hannay (a review of Bywater's book).]

We must put ourselves in Japan's place—feel the pressure of America's naval power. Japan has no bases near the United States coast—but the United States has Guam, Hawaii, and Philippines. Could Japan seize these the war would be a stalemate at the beginning. But Japan and the United States are not the only ones concerned—other nations, the British Empire first—both are rivals of ours—not unfriendly so far . . . The British Navy what it was . . . United States Navy a match for ours . . . Only sentimentalists indulge in such statements as "a war with America is unthinkable." They mean it would be repugnant to them. The question is, Shall we allow the United States to dictate terms at all times? Shall we become a second-rate naval power? It is a *reductio ad adsurdum.* Lloyd George told the truth when he said that the Empire is based on sea power, and that sea power is essential to our existence. . . . A breach between the two nations would be a grievous misfortune.

But the British Empire can not live at the mercy of another power—not even the United States. . . . We need not assume, however, that if armed strife does begin in the Western Pacific, the British Empire will find itself opposed to America. . . . We shall hold the balance of power. . . . Whether we intervene for Japan is a delicate question. . . . Whether or no, we should be strong enough to speak with authority. . . . This means a larger and stronger Navy than any other. . . . The whole dispute as to sea power in the Pacific ("cleared of cant") must come to the point—who is the stronger. . . . Sea power a mere abstraction until it is embodied in a sufficiently numerous and well-appointed navy.

As to the proposed conference, or discussion, or private arrangement, to be held in order to find whether the three surviving naval powers can not reach a friendly arrangement, I fear there is no salvation in it. Like all the others will resolve into the weaker power reconciling itself to being inferior. . . . The British Government may be ready to discuss the whole matter in a friendly way with the United States and Japan. . . . The *British Empire* will be ready to reduce if the United States will consent to reduce rather more. The United States will reduce only if they are still left on an equality. There the discussion will end.—*Edinburgh Review*, July, 1921.

CHINA AND THE WASHINGTON CONFERENCE.

[By D. Halliday Macartney.]

The question which will, no doubt, loom large will be the Pacific, where the United States, Japan, China, and also our Dominions have various conflicting aspects to solve which may need much straight talking, as nothing enduring as regards disarmament can be anticipated if these delicate problems have no common formulæ. It is a pity that we are spending money on building ships at the hour when such matters are to be reviewed. Far better might it have been to stay our hand without impairing our naval security for a few months to permit us to show an example and not to be rebuked by our friends. . . . The Anglo-Japanese alliance was formed in 1902, because of the menace from Russia to occupy Korea and the then-threatened independence of Japan. Its functions were to maintain the status quo; general peace in the "extreme East;" the preservation and independence, as well as the territorial integrity, of China and Korea; to secure the open door in those countries. In event of war, parties were to be neutral, also to prevent third parties from joining. This Alliance was renewed in 1911 for another period of 10 years. It has proved a valuable instrument to our cause, as peace has been preserved in the Far East, and our eastern possessions have been rendered secure. . . . Japan has been helpful during the war, but

her interests have not been neglected—acquiring *Korea in 1910*, *Manchuria*, *Formosa*, *Sakhalin*, *and Shantung*. She wants *Mongolia* and the *Far East of Russian Siberia*.

"In seeking reasons for a renewal, like ministries who have outrun their purpose, decrease should follow, if no new argument is put forward. Who is Japan threatened by? What grounds has she for colonising outside her own land? *There is room for her own people within her own land*. Is it time for us to ask what lawyers term interrogatories? Should Japan and the United States fall out . . . how do we stand? Similarly, China and Japan might conceivably have other means than a tribunal to determine their troubles. If the Alliance still holds good, are we to support Japan at the expense of China? The day when Great Britain can be isolated in eastern questions and be neutral has gone.

"Australia will, at all costs, oppose colored immigration, and Mr. Hughes assents that a naval conflagration in the Pacific would involve Australia no less than America, and on that account he urges cooperation on disarmament between the two countries. In any event, one must allow no combination of Powers, a white race and a colored one, against another white race. The United States is building, so are Japan and ourselves. Disarmament would be suicidal for us if, by maintaining our Alliance with Japan, we, in consequence, estrange the United States.

"The problem of reduction of armaments is bound up with the renewal or rejection of the Anglo-Japanese Alliance. By some it is contended that it would facilitate a reduction of naval forces between Great Britain, America, and Japan, but for a new Anglo-Japanese agreement to be an enduring settlement the United States should be a consenting party. General Smuts says that the only path of safety for the British Empire is a path on which she can walk with America. A most fatal mistake, in his opinion, would be a race of armaments with the relation with whom we most closely agree. A weighty memorandum has been sent to the Disarmament Committee of the League, signed by men like Gen. Maurice, Seely, Gough, Prof. Bairstow, and Admiral Hapwood, who also contributes an interesting memorandum as to the reduction of naval armaments.—*Contemporary Rev.*, September, 1921.

THE MASTERY OF THE PACIFIC.

[By Robert Machray.]

"The great powers interested in the Pacific are Great Britain, Japan, and the United States. The British Navy remains, no doubt, the most formidable instrument of policy, but it is idle to maintain

that it is as formidable as it was. Economy will perhaps curtail its power still more. British naval power in the Pacific has declined since the formation of the Anglo-Japanese Alliance. . . . Other changes—the Panama Canal, the growth of the Pacific Slope States, and the Republic of China. The greatest, however, the rise of Japan to a Great Power, with its powerful Navy, essentially a Pacific Ocean Navy. The destruction of the German fleet, on the other hand, will permit extension of British naval activities in the Pacific. This would be desirable. Throughout the Pacific, fear of Japan is almost an obsession. What a consequence of the Anglo-Japanese Alliance! This was born as a result of a ruse of Count Hayashi, who bluffed England with a threatened Russian Alliance. . . . If the Alliance was a safeguard against real or imaginary perils to Great Britain, then these perils now have passed. The Australians see peril in this pact, and are anxious that it should not be renewed. . . . America looks with suspicion on the Anglo-Japanese Alliance. The competition in warships between America and Japan will intensify unless Japan will be influenced to suspend her programme or the Alliance be dropped or modified to suit America."—(Quoted from an article in the *Times*, by W. H. Kelley.)

"What of America? *She has learned from the Great War the danger of unpreparedness*, and taking the lesson to heart. Reductions made for economy's sake shall not impair naval efficiency (President Harding) . . . Great Britain has no quarrel with America's naval programme—should welcome it, especially in the Pacific. Small likelihood of Anglo-American conflict. . . . Touching the Pacific the American policy summed up in the Monroe and Hay Doctrines. The latter doctrine, that of the Anglo-Japanese Alliance, but has not been upheld by it—far from it. . . . From ignorance, indifference, and sheer necessity, Great Britain has acquiesced in the spoliation of China. Japan seeks to impose a Monroe Doctrine all her own—very different from the open-door policy. This to Japan means a door that opens or shuts to her alone. Neither United States nor Great Britain can assent to this. China still looks to America for help and guidance, because the latter's policy, as manifested in many ways, has been uncommonly fair and above board in the Far East. In spite of our policy China is not unfriendly to us. In all the circumstances, would it not be well for Great Britain *not* to renew the alliance with Japan, and strive to arrive at an understanding—to form an entente with the United States for the real protection of China in the sense of the Hay Doctrine? For China is the key of the Pacific, and an Anglo-American Entente solves the question of the mastery of the Pacific."—*Fortnightly Rev.*, March, 1921.

CHINA AND THE ANGLO-JAPANESE ALLIANCE.

[By Sao-Ke Alfred Sze.]

As I have been so long in England, I know pretty well the general sentiment of the British people on the subject. It is fortunate for the world at large that the same guiding hand that led the British nation through a successful war is still at the helm. . . . He will not permit the peace of the world to be again disturbed. I feel sure he will in time find a way to get China and the United States into his confidence in the affairs of the East . . . the problem of the Pacific will be solved, I believe, with the same statesmanlike wisdom that has marked the handling of other momentous questions in the last few years. . . .—*N. Y. Times* (Current History, August, 1921).

Prof. Longford, in Review of Reviews, July, 1920, advocates renewal.

1. Japan no more aggressive than other powers. When she has gained territory she has worked industrial wonders.

2. The military class in Japan not so dangerous as believed. Even so, a treaty would have no bearing either way on their activities.

3. Easier to renew at this time, thereby securing peace in the Pacific indefinitely.

4. Its renewal would relieve Great Britain of a great responsibility in the Pacific.

The Spectator comments on this:

We should not disregard the wishes of the Dominions, especially Australia. To these, Japan a menace. The policy of "White Australia" absolutely fixed.

Easy to make out a case either for or against. America should be considered and the treaty modified not to offend America. Loss of treaty better than loss of Anglo-Saxon fellowship.

SEA POWER IN THE PACIFIC.

[By Hector C. Bywater.]

As regards the first, it will simplify matters if we start by postulating that the Anglo-Japanese Alliance would not come into operation in the event of war between Japan and the United States. While that assumption may be challenged by persons who have an interest in promoting friction between the two great English-speaking commonwealths, it will be indorsed without hesitation by every one who knows the prevailing temper of the British people at home and in the Dominions. In Australia and Canada, at all events, the mere suggestion of an armed league with Japan against the United States would be repudiated with indignation, if only because public opinion in those countries unreservedly sympathies with the Ameri-

'can attitude on the racial question. This truth clearly recognized in Japan, where the press in recent years has treated the alliance as an obsolete instrument of no practical value. Several journals, especially the Yorodzu and the Yamato Shimbun, have recommended its denunciation on the ground that it has become more of a hindrance than a help to Japanese policy.

That the alliance has lost much of its original significance must be plain to every observer. Concluded in the first instance as a mutual guarantee against Russia, who at that time was credited with designs both on Manchuria and India, it served its main purpose by keeping the ring clear during the Russo-Japanese War, a struggle in which Japan would not have engaged but for the knowledge that she secured against French and, possibly, German intervention. Her enthusiasm for the alliance began to cool immediately after the victorious issue of that conflict, which, by breaking the military power of Russia, left her free to prosecute her aims in Korea and Manchuria. Nevertheless, she deemed it expedient to adhere to the compact in view of the possibility that Germany might succeed Russia as a candidate for political supremacy in the Far East. Now that this danger has been averted by Germany's defeat in the Great War and her expulsion from Kiao-chao, Japanese statesmen may well ask themselves whether the British alliance has not outlived its usefulness. Nothing is to be gained by disguising the fact that Japanese friendship for Great Britain has perceptibly cooled in the last few years.

WASHINGTON CONFERENCE; BRITISH OPINION.

Source: Reliable.

(14865–A.)

29 September, 1921.

Every effort has been made to discuss with various types and classes of British people the question of the Washington Conference and the results to be acomplished by this Conference. An effort has been made to get at the British point of view with regard to the Conference. Various phases of the Conference have been discussed with naval officers, army officers, Members of Parliament, civilians, and representatives of other foreign embassies and legations. It is realized that much of such discussion reduces itself to a question of personal opinion; as these opinions vary it is difficult to draw correct conclusions which represent the probable attitude of the British Government.

One outstanding feature is the great regret that the British feel over the fact that no preliminary conferences were held. This would be the normal British way of doing business and is more or

less standard European practice. Many British feel that the Conference would have commenced its work on a much more satisfactory working basis of such preliminary conferences had been held.

The second point resolves itself into a question as to just what the Conference means, what are its purposes, and what results it is attempting to accomplish. There has been a great confusion of ideas relative to the purpose of the Conference. Some of this confusion is crystallizing out into definite proposals, but the average public mind is still a bit befogged over the various issues. The average Britishers has no concrete idea of the scope of the term "problems of the Pacific."

He understands fairly well the general meaning of the term "disarmament" and the term "limitation of armaments," but when the questions of "the problems of the Pacific" are brought up he is quite apt to consider the question from the point of view of "the Yellow Peril," a subject that receives considerable attention from a number of intellectual Britishers. The more intelligent Britisher has a pretty well-defined idea of what the Conference hopes to accomplish, but, as a general proposition, he is inclined to be skeptical as to results. Army and navy opinions generally express themselves as believing that the Conference will be a very delightful party for a number of important officials and their suites and will degenerate into a joy ride without accomplishing any results whatsoever. The wish may be father to the thought. They believe that the most that will be accomplished will be the removal of some misunderstandings and the clarification of some doubtful points which exist to-day.

Generally speaking, the British feel that if there was any chance of an alliance, an agreement, or even an understanding between the United States and Great Britain, most of the rest of the problems would be simple. They feel hopeful that some such alliance, agreement, or understanding may occur, but they do not go very much beyond the hope, as there is no real expectation of such a result.

The dark horse in the entire Conference is undoubtedly Japan. Apparently, no one has any clear idea as to just what Japan stands for or just what position she will take in the Conference. It is the general belief that, if the United States and Great Britain were in agreement on a definite program, they could readily secure the consent of the Japanese either by diplomacy or by diplomatic coercion. Failing this, there is a great deal of skepticism as to whether or not any actual results will be accomplished.

When the subject of "the open door in China" is discussed one hears a lot of time-worn arguments with Japan, "the colored gentleman in the woodpile." The activities of the Japanese in the mar-

kets of Great Britain, France, Switzerland, Holland, and Germany have been such and are such to convince any one with an open mind—(a) *that the Japanese believe in preparedness at a time when other nations are war weary, tax burdened, and generally lethargic;* (b) *that they are accumulating an immense quantity of material capable of being used in war; and* (c) *that if there is to be an "open door" in China the Japanese are going to be the butler at the door.* What other motives or policies they may have they rather successfully consider as their own business.

There are undoubtedly a large number of British in official life who believe that a *triple alliance* of the United States, Great Britain, and Japan would be a first-class move to make under present conditions. It is not believed, however, that such an alliance would be immediately popular in this country, although the people could be educated up to it without much difficulty.

The Anglo-Japanese alliance is very much of a problem, not only with Great Britain but also with her Dominions. Such an alliance is undoubtedly unpopular in most of the Dominions except with a few of the more important politicians who have been indoctrinated by the British with the idea that such an alliance has assets which more than outweigh the liabilities. India is, of course, uppermost in such British minds. It is not believed that the Japanese alliance is popular in Great Britain, and the question of renewing this alliance is one which the average Britisher feels should be postponed until some definite information is available relative to the attitude of the United States towards such an alliance. It is frequently apparent that the British have in the back of their heads an idea that some sort of an alliance, agreement, or understanding may be obtained with the United States; if such conditions arose it is believed that they would be quite willing to drop the Japanese alliance, unless the United States were willing to accept a triumvirate agreement.

The personnel of the British representatives to the Conference is a source of considerable difficulty to select. There is little doubt but that originally the Prime Minister intended to go. There is now little doubt that he will not go. The Irish question, unemployment, and possibilities of a general election are three vital factors that stand in his way. The personnel will probably consist of Mr. Bonar Law (if his health permits), Mr. Arthur Balfour, the Secretary of State for War (Sir Laming Worthington Evans, Bt.), the First Lord of the Admiralty (Lord Lee of Fareham), and possibly one other at present unknown to us. There will be a military staff, a naval staff, and a civilian staff of advisors; most of these have already been nominated and the matter is under consideration by the Treasury officials at present. The Treasury officials will have the last say on this

matter on account of the expense involved and the amount of allowances that they are willing to make.

The naval staff will be headed by the First Sea Lord, Admiral Beatty; the D. N. C. S., Admiral Brock, or an assistant D. N. C. S. Admiral Chatfield will probably take Admiral Beatty's place after the first few weeks of the Conference. Other naval members will be Capt. Domville, Director of Plans Division, a D. N. I. representative, and a D. N. C. representative (probably Sir Eustace d'Eyncourt, the Director of Naval Construction). Commander Bellairs and Paymaster Capt. Spickenell will accompany Admiral Beatty.

At one time it appeared as if the Irish situation would be a thorn in the flesh so far as America and Britain getting together is concerned. It is the general opinion now that this thorn has been removed as far as it is practicable for the British Government to remove it.

There is another irritant which continually crops up in the way of merchant marine difficulties, and while every effort will be made to prevent friction on this score it appears likely that this question will come up. British officials in shipping and shipbuilding industries are well aware of all the "teeth" in the Jones bill. They are also well aware of the numerous types of preferential treatment given to British bottoms in various parts of the world, and they are fully aware of the activities of American officials, political and otherwise, who are interested in shipping and shipbuilding.

The oil interests of the two countries may also be a source of irritation, although this is not so much a subject of discussion at the present time as it was a few months ago.

It is difficult for many British people who have any connection with industry or finance, particularly finance, to understand how the Conference can really accomplish anything without taking into consideration the financial questions which include the stabilization of exchange and the war debt. This financial problem by many is considered the foundation stone on which the Conference must build its structure if it *is to be anything more than a Conference of words.*

So far as the question of naval armament is concerned, there can be no doubt but that the average Britisher is convinced of the necessity of Great Britain maintaining a Navy second to none. It is the greatest kind of wrench to them to give up the idea of the "two-power standard" and accept the "one-power standard." They only consent to this because, for financial reasons, their backs are to the wall. Great Britain is extremely war weary, so that anything pertaining to war is very unpopular. Yet deep down in their hearts Britishers still want to maintain a *Navy superior to any other in the world.* Their interest in actual disarmament is not really of sufficient importance to warrant serious consideration. Their

interest in a limitation of armaments is great, and their interest in the cessation of building at the present time is greater, for the very simple reason that they are not in a position to go ahead; that is, they can not bear the cost at the present time, and therefore it would entirely suit British policy to cease building for a given period of years. Furthermore, it would suit British policy to limit armaments, especially if the basis of limitations was made on ships *built at the present time*, for that project would leave Great Britain with a Navy superior to other navies of the world; after all is said and done, that is the consummation that the Britisher ardently desires.

In discussing the Washington Conference with Britishers who believe in the League of Nations (and there are a good many of these), an American is always confronted with the argument that America is extremely inconsistent. These League of Nations Britishers hold that if America would join the League of Nations everything that is possible for the Washington Conference to accomplish, and much more, could be accomplished by the League of Nations. Such Britishers are rather inclined to take the attitude that America refuses to join the League of Nations and yet is quite willing to set up a Council of Nations, of which the Washington Conference is a preliminary step.

In conclusion, one is impressed by the fact that, while the British Government is taking the Washington Conference with a great deal of surface seriousness, the British people, as a rule, do not expect this Conference to accomplish any major results. The consensus of opinion appears to be that it is a good idea to get together and discuss these matters, clarifying doubtful points, correcting misunderstandings, and getting better acquainted with one another. Beyond that they feel that the results will be very meager so far as the major problems of the world are concerned. Certain very intelligent Britishers, when discussing this Conference, invite attention to the fact that, even if the Conference reaches major results and agrees to certain major points, these results do not amount to anything until they are approved by the respective Governments, and they always ask the pertinent question as to whether or not the United States Senate will approve of the action taken by the United States representatives at the Conference. When it comes to world questions, the thinking Britisher has uppermost in his mind the rejection by the United States Senate of the Treaty of Versailles. Assuming that the American Government will stand behind whatever action is taken by its representatives, the Britisher very naturally asks the question as to whether the Japanese Government, for example, will stand behind the action taken by the Japanese representatives. Britishers feel quite sure or take for granted that the British Government will stand

behind the action taken by the British representatives, which leads one to query whether the British representatives are likely to take any very radical action without the presence of the Prime Minister.

Is it possible to evolve harmony and get down to brass tacks with the 100 per cent American, the stolid Britisher, the subtle Japa, the voluble Frenchman, and the visionary Latin in the Conference?

PERSONAL CHARACTERISTICS OF PROMINENT JAPANESE NAVAL OFFICERS.

Source: Reliable.

(3116–F.)

9 September, 1921.

In reply to an inquiry from this office the Minister of the Navy submitted the following list of officers who will be sent to Washington to the Conference. These officers have been "privately decided upon" and their names have not yet been officially announced.

VICE ADMIRAL H. KATO, CHIEF OF DELEGATION.
CAPT. K. YAMANASHI.
CAPT. N. SUYETSUGU.
CAPT O. NAGANO.
CAPT. Y UYEDA.
COMMANDER T. HORI.
LIEUT. COMMANDER A. KURAGANO.
LIEUT. COMMANDER M. HIBENO.
LIEUT. T. KUWABARA.
ENGINEER LIEUT. Y. MITO.
PAYMASTER LIEUT. COMMANDER D. TAKEL.
CONSTRUCTION LIEUT. COMMANDER T. TAJI.

Kato, Hirocharu (or Kanji).

Born 1870. President of Naval War College. Has United States Navy D. S. M. In 1918, when Japanese expeditionary force was sent to Vladivostok, commanded the naval forces that accompanied the expedition. Had his flag in old battleship *Hizen* at Vladivostok, where he was associated with Admiral Knight, whom he likes and admires very much indeed.

A small, slight, alert-looking man. Very able, intelligent, and agreeable. Has traveled a great deal. Apparently likes Americans. Head of mission that visited England, France, Germany, and America in 1920 (about 8 months abroad). Well read, broad-minded. Speaks and reads English and Russian. For a Japanese naval officer very outspoken.

Was naval attaché to Petrograd in 1916. In 1914 commanding *Ibuki* (armored cruiser) convoying Australian transports. In Russo-Japanese War was on staff of combined squadron. A man of strong

opinions, marked initiative, and progressive. Would take important duty in time of war. One of the very best Japanese naval officers. A leader. His enemies call him narrow-minded and a radical.

He admires Admiral Sims very much. Expressed the wish to the naval attaché that some big man in the Japanese Navy would do such a high-minded and courageous thing as Admiral Sims had done in pointing out the need of reorganization in the Navy Department. He declared that the Japanese Navy Department needs such a reorganization.

In conversation with the naval attaché declared himself unqualifiedly in favor of a reduction of armaments, and stated his conviction that the only practical solution lies in the adjusting of opposing national policies, not in the adjustment of naval strength. Said that each Power should send a delegate of the caliber of Chief Justice Taft and that these delegates should lay on the table only vital policies and then reconcile them with mutual understanding and sympathy.

Stated that he would like to spend two years in the United States studying American psychology His hobby is race psychology, and he thinks that every naval officer should devote much time to this study.

He was reading Pitkin's book "Must we fight Japan." Thought it fair to both sides and helpful in pointing out where prejudice and lack of knowledge were leading the two nations.

K. Yamanashi, Capt., Second Senior Officer in Bureau of Military Affairs, Navy Department.

Born 1877. Entered Navy Academy in 1895, lieutenant commander in 1908, commander in 1912, and captain in 1916; 1911 on *Ikoma* (armored cruiser); 1912, A. D. C. to the Navy Department: 1913, Yokosuka Naval Station; 1914, executive, *Hiyei;* 1915, naval general staff and Higher Naval College; 1916, duty abroad in Europe and America; 1917, Higher Naval College; 1918, commanding *Katori* (eight months); 1919–1921, Bureau of Military Affairs, Navy Department.

One of the ablest officers in the Japanese Navy. Was promoted to captain over several seniors. Formerly senior aide to the Minister of the Navy. One of the most friendly, frank, cordial, agreeable, and likeable officers in the Japanese Navy. Especially friendly with foreigners. Will feel entirely at home amongst them and able to meet them on equal terms, and will create a most favorable impression.

Suyetsuga, Capt., Naval General Staff.

Born 1880; entered Naval Academy, 1896; lieutenant commander, 1909; commander, 1914; captain, 1918; in 1911, on *Tsukuba;* 1913, on *Ibuki;* 1914, on naval general staff; 1916, duty in England (14

months); 1917, Higher Naval College; 1918, staff First Squadron; 1918, to command *Chikuma* (two years); 1920, naval general staff.

Nagano, O., Capt., Naval Attaché, Washington.

Born, 1880; entered Naval Academy, 1896; 1905, lieutenant; 1910, lieutenant commander; 1911, division officer *Katori;* 1913–1914, studied in America; 1914, commander; 1915–1916, executive, *Iwate;* 1917, Navy Department; 1918, captain and at Naval Personnel Bureau; 1919, same as 1918; 1920, commanded *Hirado* (light cruiser) for 11 months; 1920 (December), ordered naval attaché to Washington.

Large heavy man; loquacious for a Japanese; affable; speaks good English; studied international law at Harvard for seven months and English in Washington; considered a good all-around officer.

Ueda, or Yueda, or Uyeda, Capt., Navy Department.

Born, 1878; 1898, entered Naval Academy; 1910, lieutenant commander; 1911, duty in America; 1913, Naval Arsenal; 1914, on *Settsu;* 1915, A. D. C. to Minister of Navy; 1916, waiting orders; 1917–1918, technical department; 1918, naval attaché to Washington; 1919, captain; 1920 (December), ordered home.

Since his return from duty in Washington to the Navy Department, Tokyo, Capt. Ueda has not called on the naval attaché or at the American Embassy, which may indicate that his former *friendly feeling for America has changed.*

Hori, T., Commander, Navy Department.

Born, 1883; 1901, entered Naval Academy; 1914, lieutenant commander; 1918, "A" course, Higher Naval College; 1919, Bureau of Military Affairs; 1919, commander; 1920, Navy Department.

Kurangano, A., Lieut. Commander, Aide to General Staff.
Hibeno, Lieut. Commander, Assistant Naval Attaché, Washington.

Age, 36 years; speaks English fairly well; agreeable, earnest, friendly, serious-minded, likable man; has been five years in Navy Department in Tokyo; last three on naval general staff; in May, 1920, was aide to captain of *Kasuga* when that ship represented Japan at the Portland, Me., celebration; is anxious to do well by his own service and to make an excellent impression on United States Navy; has served under Capt. Nomura (senior aide to Minister of Navy), whom he admires and wishes to imitate; knows that Americans like frankness and straightforwardness and will endeavor to practice both.

Kuwabara, T., Lieut., Yokosuka Aviation Division and instructor Gunnery and Torpedo School.

Mito, Y., Engineering Lieut., instructor Engineering College, Yokosuka Naval Station.

Takei, Paymaster Lieut. Commander, Navy Department, Staff of Minister of the Navy.

Is the officer that draws up the naval budget; is extremely industrious, very able, and affable; studied at Columbia University and Princeton and also in the Bureau of Supplies and Accounts in Washington; is a broad-minded man of the world; is friendly to foreigners, liking and admiring Americans especially well; has unusually high morals for a Japanese; is not an habitué of tea houses and neither drinks nor smokes; is a studious, serious, sober-minded man.

Taji, T., Constructor Lieut. Commander, Bureau of Material, Navy Department (Superintendent of Naval Construction and on General Staff).

LIMITATION OF ARMAMENTS—ITALIAN NOTES AND COMMENTS.

Source: Reliable.

(14884.)

14 September, 1921.

As perhaps being pertinent to the coming Disarmament Conference, the following general summary of the Italian press view is forwarded:

The Italian press, which is fairly well controlled by the Government in matters of importance to the Nation, is beginning to take up the question of Italy's war debt.

This debt has been kept under cover, and the general public knows little and cares less about it. In fact, when the last financial statement was issued by the Government great stress was laid by the press on the very promising conditions of Italian finances. Headlines were magnified, showing that of the 14 milliards debt the next taxes, etc., would clear off all but about 2 or 3 milliards, and this also would soon be wiped off, etc. This was given out to lighten the effect of the then-imposed extraordinary tax levies.

No mention was made of the hundred milliard foreign debt, and when mentioned it somehow amounted to only about 70 milliards.

Now that the Government is beginning to realize that the United States is really serious about collecting this debt, a disagreeable sensation is felt and is becoming apparent. The Tribuna (a very conservative Rome paper and supporter of the Government) prints from its United States correspondent that Americans have become "fanatics" (no longer Puritans), that the word "liquidate" does not really mean "pay," as is understood in Italy.

The idea prevalent here, viz, *that America will make Europe disarm or pay up immediately is, to an Italian, "interference of fanatics in other people's business."*

All the expense the Italian Government is employing in its propaganda in the United States amongst Italian-born citizens, with the plausible intention of cementing United States–Italy relations, is explained, from what can be gathered here, in the following manner:

Italy will do everything to avoid (honorably) paying this war debt. It is the viewpoint of the rich and poor. Italy, as the poor, is not expected to pay a debt to the rich (United States) debtor *who has no need of money.*

There are now several million Italians in the United States. Maybe, in 10 years, if everything is favorable, there may be 10,000,000 of voters of Italian origin. According to Latin calculation for a big business affair, involving a hundred milliards, *at least 10 years will be required to talk it over.* It appears that Italy intends to work up the sentiments of these new "fratelli irredenti" in the United States, and, through their influence with Congress and the Senate, hopes to cancel the debt.

LIMITATION OF ARMAMENTS—JAPANESE ATTITUDE.

Source: Reliable.

(14746–A.)

9 September, 1921.

"Four cardinal points of the policy to be adopted by Japan at the Pacific Conference have been agreed to and have been formally submitted to the Throne for approval. These are:

"(1) Undeviating insistence will be made upon the maintenance of the status quo of the leased territory of Liaotung.

"(2) The rights acquired by Japan in the South Manchurian Railway must be recognized and continued.

"(3) The settlement of the Shantung question must be left to direct negotiations between Japan and China, in accordance with the provisions of the Versailles Treaty.

"(4) The award of the mandate to Japan over the island of Yap must be recognized.

"These four points cover to a very large extent the claims of Japan as to those *faits accomplis* which are to be considered beyond the scope of the Conference, although other problems more or less affecting the above, but not touching their fundamental principles, will be subject to adjustment after a full exchange of views among the delegates at the conference. On the four points specified, Japan will stand firm and will resist any attempts to have them made matters of conference controversy.

"Premier Hara, on Monday, laid this policy before H. I. M. the Emperor, visiting Tamozawa for that purpose. Imperial sanction was obtained and the policy was announced at the meeting of the Cabinet Council on Tuesday as that formally adopted. There will be some further discussion of the details at the meeting of the Diplomatic Advisory Council, called to meet on Friday."

The reasons why these four points must be recognized, according to Japanese statements, are: (1) The lease of Chinese territory in

Manchuria was taken over from Russia as a result of the Russo-Japanese war and subsequently ratified and extended by China. (2) The rights in the South Manchurian Railway acquired in the same way as (1), and subsequently extended, must hold on account of the heavy investments made by Japan. (3) The settlement of the Shantung question must be in accordance with the terms of the Versailles Treaty. (4) Same reason as given in (3).

LIMITATION OF ARMAMENTS—JAPANESE ATTITUDE.

Source: Japanese Press.

(144746–A.)

9 September, 1921.

The digests of press comments already forwarded and many other editorials, articles, and interviews too numerous for forwarding reiterate that Japan must demand at the Washington Conference—that the fortifying of Guam must not be carried out and that the present fortifications at Hawaii, the Philippines, and the Panama Canal be razed. Until lately this office regarded these demands as utterly ridiculous, but their continued reiteration from many different sources has compelled serious consideration of the matter.

When the Conference was first proposed Admiral Kato (Minister of the Navy) stated in a press interview that it would be well if the disarmament question were considered entirely separate from policies. When asked why, he replied, "The less said the better." Further than this, the proposal to discuss policies at the Conference met with almost universal disapproval in Japan, and, when finally reluctantly accepted as inevitable, the demand from all quarters was that disarmament should be discussed and settled first.

It now seems that the Minister of the Navy long ago realized that it would be much more difficult to persuade the United States to disarm to the same extent if policies were considered before or in conjunction with the question of disarmament than if disarmament were considered first and by itself.

This office now sees in the Minister's statement the key to Japan's disarmament policy at the Conference—which is to prevent the fortifying of Guam and to accomplish the abolition of all other American pacific defences.

Japan believes that it will be comparatively easy to convince the other delegates that the fortifying of Guam and the maintenance of other Pacific defences actually constitute aggressive measures against Japan.

Cleverly taking into consideration that the United States called the Conference and is therefore most anxious and most responsible for its success, Japan counts on being able to force America to make many sacrifices to the cause.

Doubtless Japan will offer to give up fortifying the Bonins and the Loochoos and to raze the Pescadores defences in exchange for like concessions regarding Guam, Hawaii, and the Philippines. This offer, however, would be worth nothing, as these islands lie close to Japan and are not vital points.

Japan must naturally expect to give up some of her existing or proposed fleet in fair ratio to the ships similarly given up by the other Powers at the Conference, but she well understands that the relative strengths of the fleets remaining is as nothing compared to the importance of fortified outlying bases. But when policies are considered, Japan's designs on China, her interests in Manchuria, Mongolia, and Siberia, and in Saghalien Province are seen to be so selfish and aggressive that fortified naval bases and an adequate fleet are absolutely necessary for the United States, not for the defense of our coasts, but for the protection of American interests in the Far East.

If America gives up the right to fortify Guam and to maintain the defences of Hawaii and the Philippines, Japan will have won at the Conference and will be at liberty to carry out unchallenged any policy she cherishes to pursue in the Far East.

LIMITATION OF ARMAMENTS—JAPANESE ATTITUDE.

Source: Reliable. (Press and other comments.)

(14746–A.)

9 September, 1921.

During the two years that have elapsed since Japanese troops were dispatched to Siberia, in August, 1918, over 2,000 lives have been lost and 400,000,000 yen wasted, while nothing has been obtained in return. Japan has only acquired the ill feeling of the Russians, the suspicions of the Powers, and attacks by the Partisans. We earnestly hope that the Government, instead of insisting on the point of honor and prestige, will sweep aside all the past difficulties, letting failures be failures, and try to obtain the best possible agreement, making an end of this unpleasant business. Otherwise Japan's position at the Pacific Conference will become more and more difficult. In fact, it is impossible for the people to bear any longer the meaningless burden of maintaining troops in Siberia.

American and British Self-Interests.

Great Britain and the United States are as unfriendly as a dog and a monkey over oil concessions and other interests. If either is satisfied at the Conference, the other will have to be left discontented. Great Britain always pursues the policy of self-interest and the United States is not in the least behind her in this respect. If any

interest is to be served, England will join hands with any country—until it ceases to be the case. While the Anglo-Japanese Alliance served her purpose, England took advantage of it on all possible occasions, but the majority of her people now desire its complete abandonment. If any agreement is possible between England and America at the Conference, it will be confined to cases where the two countries are jointly to obtain interests from a third country.

Great Britain possesses the largest interests in China of all the Powers, and American instigation is responsible for the anti-Japanese agitations and permanent commotions in that country. Great Britain and America each want to maintain armaments, which even when limited are superior to those of any other country. To insure that all countries make only just claims, it is necessary that the proceedings be open to the public. If the American Government is solicitous for the peace of the world, why not arrange for the discussion of all questions in broad daylight.

(Baron Goto, Mayor of Tokyo.)

Japan can not delay negotiations with China without exposing herself to criticism. If she does everything possible to settle it before the Conference the blame for the failure of the negotiations will then rest on China. There is no reason why Japan should refuse to withdraw from her original position in regard to Yap. I can not believe that the abandonment of the mandate over Yap constitutes a reflection on the reputation of the Japanese. The retention of Yap carries with it obligations to fulfill all functions involved in the mandate. Not only is the navy not powerful enough, but the condition of our finances does not allow of expenditure necessary for maintaining the mandate.

The authorities have deluded themselves into believing that they can maintain the 8-8 fleet when it is completed. Where are the naval authorities going to obtain the necessary supplies of fuel oil for the 8-and-8 fleet.

The authorities are laboring under the delusion that acquisition of new territory adds to the welfare of the nation. They are preoccupied with this idea; but the acquisition of territory has actually made Japan poorer. The policy of territorial expansion is bleeding the nation.

(Count Soyeshima, published in "Diplomatic Review.")

He ridicules the fears of some Japanese regarding the Conference and proposes a naval ratio of eight, nine, and ten, as between Japan, American, and England. He declares that the abolition of all fortifications in the outlying Pacific possessions of these three countries is essential. He expresses his concern over the lack of courage and consistent opinions, of judgment, and competence

among the Japanese people. "Why should Japan hesitate to participate. Even if ambitious designs should be revealed at the Conference by others, we have nothing to fear if we do not go astray from the path of justice. Some people regard the situation of Japan at the coming Conference as that of an accused before a tribunal before which the notorious 21 demands will be put. It is true that the Chinese policy of the Japanese Government during the World War was a blunder. Japan must take care not to repeat the wrongs she committed in the past and to guide the Chinese nation as our good neighbor in the future both in name and in reality." He advocates the scope of the discussion to the restriction of armaments, the enforcement of the open-door policy, and equality of opportunity in China and Siberia. Restriction of armaments should include the absolute abolition of fortifications in Formosa, Pescadores, Hawaii, Guam, Philippines, Hongkong, and Singapore and Port Arthur.

"The deplorable failure of the Chinese policy of Japan during the World War, as well as the indiscretion and unscrupulousness of part of the Japanese nation, gave the United States the pretext to continue its plan of naval expansion. Thus the security of Japan was menaced, and the Government launched the project of the 8-and-8 fleet. Any proposal to entirely abolish arms in the Pacific should be opposed, on account of the present conditions in the Far East. The 21 demands are unnecessary and should be reduced to 15.

"The abolition of all navies might end in indiscriminate piracy by naval forces under the soviet government. It is impracticable to abolish all capital ships. The difficulty of disarmament lies in the standard of reduction. Japan, America, and Great Britain should reduce their navies in the ratio of eight, nine, and ten. The ratio of fighting power and the classification of war ships should be determined by naval experts, and excess ships should be gotten rid of and the size of ships limited.

"Britain would return Wei-hai-wei as soon as Japan has surrendered Shantung. The permanent peace of the Far East can only be guaranteed by genuine sacrifices on the part of the interested powers. The failure of the Conference would leave an even darker stain on the fair name of America than that caused by her refusal to join the League of Nations, in which she was the prime mover."

(The Yorodzu, 25 August.)

Japan hopes China will have her delegates introduce a resolution for race equality at the Washington Conference. The Chinese and Japanese are suffering equally from race discrimination. Absolute equality should be demanded, and the point should be pressed until all immigration questions are settled. Race equality is a demand for

justice, and Great Britain and America unjustly opposed it. China should make great efforts to demonstrate the principle of racial equality, and Japan should assist her and call the whites to account for their arrogance.

(The Nichi Nichi, 27 August.)

If the situation requires, Japan should not forget to refer at the Washington Conference to the fortified condition of Panama, as one of the most serious questions that demands as great attention as any others.

(Osaka Asahi, 28 August.)

Japan never leads, but always follows, in international affairs. It is because military affairs are placed outside the pale of political affairs—because there is a militarist diplomacy besides a foreign office diplomacy. The military authorities are beyond the control of the Government. This is the principal reason Japan excites the suspicions and misconceptions of other countries. The spirit of militarism, based on old-fashioned patriotism, should be destroyed altogether, and Japan should be prepared to present proof of its death.

(Yorodzu, 2 September.)

England's principal object at Washington Conference is to promote her interests in China. Great Britain and America think that Japanese influence in China can be reduced by curtailing armaments. But they are egregiously mistaken in this. Japan's commercial development in China is due to the geographical and racial relations—not to her political position. It will be most difficult for Great Britain and America to obtain any economic interests in China without Japan's full consent.

(Dr. Washio, 3 September.)

Japan is anxious for the Conference to succeed, and is ready to go more than halfway toward a compromise. The Japanese press is a very irresponsible affair, more neglected than inspired by the men who control the country's destiny. It is a medium through which writers freely ventilate their private moods and opinions. In a sense there is more freedom of speech in it than in the western press, but there is less responsibility. There is childish spontaneity in all its utterances of abstract justice and even of cynicism. The practical men know better. Even writers themselves know the futility of their arguments, which are all the more tempting to them because of their futility.

Japan can only be fairly criticized for setting "imperialistic sail" from 1905 to 1916, culminating in the most foolish diplomacy she ever played, i. e., the 21 demands. I know enough military officers to learn the ideas circulating amongst military men. As far as I am

aware, the dominant idea is self-defense. There is scarcely any aggressive policy thought or talked among either older or younger officers. They can be provoked to a desperate stand only by an unsympathetic offensive diplomacy by America, which would take no cognizance of the fact that Japan is facing the most difficult transition period in her history. The success or failure of the Conference depends upon the interpretation of Japan's motives by the American press.

The press of the United States, though far better organized and disciplined than the Japanese, is anything but liberal. Reflective reasoning does not appeal to its temper. Its outstanding characteristic is a spirit of campaign. The public has to be caught up and swept away as by a tornado. The danger of the press can only be averted by redirecting its attention to a new issue of such a sweeping nature as will captivate its interest and make it forget the old pin pricking issues, which can be left to the healing virtue of time. The disarmament question is well chosen for this purpose. Both to prepare the way and to give meaning to the settlement of the question is imperative that definite understanding shall be secured among the interested Powers regarding the Pacific and Far Eastern problems.

To accomplish this without opening up old irritating wounds and risk the wrecking of the Conference, we must look for a masterly gesture of constructive statesmanship. The motive of America must be understood and assisted by the British and Japanese Governments. These must be unity of purpose.

The agreement sought for must be of such a positive and constructive spirit that will provide for equitable adjustment of the outstanding special interests of the Powers concerned. It must be the statement of a working agreement, the realization of which will naturally efface all objectionable features of these special interests. In substance it is economic, it is economic exploitation of China without political interference, or briefly international capitalization. The Powers can reasonably be asked to renounce the political backing of their special interests, but the economic fronts of those interests must be recognized, on the basis of accomplished facts, and any attempt to dispute the latter claims will lead to an endless series of retroactive quarrels. If the political features of Japan's special interests, legacies of the old order, and acquired in self-defense can be made unnecessary, they will only be a burden.

Japan cares only for freedom to develop them as purely economic propositions. It is true that the Japanese policy toward China has always been and still is guided by political considerations. The Terauchi Ministry sought to influence China politically by assisting the military faction of the north. Political bias is even apparent in

the recent proposal to the Finance Minister for an economic alliance between China and Japan. But Japanese statesmen are beginning to see their error in trying to unify China politically. The Japanese business men are almost unanimously in favor of a purely economic policy.

It will be some time before China will rise to her political responsibility. Her present hope is in her industrial development. At present she is only able to develop industrially.

The agreement of the Powers concerned in her destiny to bend their energies toward economic activities (with as few political dealings as possible) will certainly accelerate this development. China must pass through a stage of international capitalistic exploitation before she grows to her full political statue. This is realized by the great majority of intelligent Chinese. They believe it will not jeopardize China's political independence. A general understanding among the Powers interested will put a stop to her favorite diplomacy of playing off one power against another. To bring about such general understanding in expedient forms, agreeable to all the Powers, is the statesmanship required in the coming Conference.

It will be a working principle and will clear the darkened sky of the Orient for at least 10 years. Whether this principle is called the open door and equal opportunity, or by any other name, its essential fairness and vitality is on its positive and constructive side. Negative criticism of Japan will not help, but only nag. If America means to insist on the purely negative application of the principle of the open door, the Conference is foredoomed and will leave the relations of the two countries still further strained.

(Dr. Terao, 4 September.)

The Premier seems to have considered the Conference very lightly. The authorities need to be whipped into proper concern.

(Dr. Kobayashi, 4 September.)

It is clear that China will be given primary consideration by the Conference, which will settle the accounts left unsettled at Versailles; now that the Anglo-Japanese Alliance has become a scrap of paper, China all the more relies upon America for help. We should abandon our aggressive policy in China, take the initiative to abolish the exclusive settlements—extra territoriality—and declare for the return of Shantung to China.

(Dr. Shiba, Editor of Yorodzu, 4 September.)

In my opinion America and England have no definite program of their own for the Conference, while Japan is not fully aware of the circumstances leading to the shifting from the door of the Anglo-Japanese Alliance to the Pacific Conference.

(Dr. Imaoka, 4 September.)

The putting into practice of the limitation of armaments would cause Japan's iron industry to decline. The Pacific Conference was planned to deprive Japan of sources of supply of iron, oil, cotton, and other materials by compelling her to abandon her rights and concessions in Siberia and China. This would be the purpose of reducing Japan to the position of a fourth or fifth rate Power.

(Mr. Okada, a Peer, 4 September.)

Advocated conducting a campaign of education.

(Yomiuri, 6 September.)

The Yap settlement is the result of passive and not of active diplomacy. The determination of the Government to settle the question is due to the convocation of the Washington Conference. So also is the effort to settle the Shantung question. The people, however, will be glad to see the Siberian, Chinese, and Pacific questions settled, even if only on account of the Conference. But Far Eastern question should be settled only voluntarily by the sovereign's will of Japan, with reference to her special relations with China.

(Tokyo Nichi Nichi, 6 September.)

In Japan, as well as in America there is advocacy of publicity for the Conference. But the question depends upon whether secret or open sessions are better calculated to attain the objective of the Conference. If open, it will be difficult for a country to modify an opinion once expressed, even when expressed with full sincerity, for this concerns a point of honor.

Practically, therefore, secrecy can only be maintained at the Conference, which is unfortunate from the idealistic point of view. Open diplomacy is the ideal of all people, and every effort should be made to realize it.

Let us hope that Japan's delegates will not unnecessarily hold private or special conferences with other delegates during the session. It is most necessary that the intentions and beliefs of the Japanese people should be expressed clearly, straightly, and boldly before all the delegates of the participating countries. There are behind our delegates neither militarists nor bureaucrats, but 70,000,000 people. In this spirit should the Japanese delegates go to Washington.

(Mr. Yukio Osaki, Former Minister of Justice in Okuma Cabinet and Former Mayor of Tokyo, 7 September.)

There exists to-day in Japan exactly similar conditions and sentiments as at the time of Commodore Perry's visit. Then most of the people of Japan believed that the American commodore came to invade or to annex the country. To-day most of the people believe America has come forward with proposals for disarmament with

purely selfish aims, and they suspect her motives. The people are mistaken to-day as they were in 1853, and they will find this out, coming to realize America's sincerity. To-day, as in Perry's time, if we resist we will injure our own cause. What Japan needs to-day is men of broad vision. The Japanese people are easily led and therefore easily misled. To-day they do not wish to kill or to be killed. The trouble is that they are being misled through the influence of the militarists and the press. The militarists, while not as powerful as formerly, are still the dominant factor in controlling the policies and destiny of Japan. To a great extent they either control the press or through subtle methods influence it. Even the newspapers, which editorially support disarmament, display in their news columns articles and inspired news which stir up the nationalistic spirit and create misunderstandings as to other nationals. Japan is pictured by the press as not only invincible in arms, but is always and ever in the right, in every case; again, whenever necessary or advisable the people are kept in ignorance through the suppression or withholding of news. The militarists formerly had their specific organ, but now they use all newspapers through news liberally furnished or supplied to reporters. Head lines used purposely, incite and often mislead, for in many cases the substance of the story itself is harmless. The press of Japan is under the influence of the militarists. The leading articles attract the readers less than the news columns, and it is through these columns that the inspired news controls public opinion.

Militarism has received its stimulus from without as well as from within the country. Until Japan had a big army and navy she was disregarded abroad and treated as a sort of semi-independent nation. It was realized after 1894 (China-Japanese War) that this sentiment and opinion abroad had changed. After 1904 (Russo-Japanese War) Japan took her place among the five great Powers, and in a naval sense among the three leading Powers.

The people reached the conclusion that to make Japan great in the eyes of the Occident success must be gained by the use of the sword. Reason will prevail, but the people want the proof. It is my belief, however, that the popular demand in England and America for disarmament will reach the Japanese people and will affect them. What we need are leaders of vision. We have made mistakes.

Occidentals credit us with having broad policies. We never have had. We have been and are opportunists. It will take many years to counteract the present feeling of the Chinese toward us. We will have to make every sacrifice to prove our friendship.

The change that I have advocated and will continue to press is the revision of the regulations in regard to the appointment of the Minister of War and Navy.

It is impossible to form any cabinet without the approval of the militarists, and every cabinet's existence is subject to their dictation.

Opinions as to the Coming Conference.

[By Mr. Yukio Ozaki.]

We must first agree on broad general principles. I strongly favor the policy of leaving questions which can not be settled through discussion by the contracting parties to an international tribunal or commission.

The limitation of armaments should be based on some definite monetary basis. It might be agreed that none of the greater Powers should spend more than a maximum of 10 per cent of the total budget for military purposes. Smaller Powers might spend a little more. Or the sum could be fixed on a basis of the average naval expenses for a period of 5 or 10 years prior to the war, as may be agreed upon. Compared with present expenditures this average would be small. Each country to expend their respective proportion as they desire. It would permit of initiative and invention without outside interference. The world is moving rapidly in the right direction. Japan must not hesitate or falter or she will only have cause for regrets.

(From "Yomiuri," 8 September, 1921.)

Four members of the Diplomatic Council, Viscount Hirada, Viscount Ito, Baron Goto, and Mr. Inukai, urge necessity of establishing a fundamental policy toward the Pacific Conference. They seem to think that Japan is to be pressed, obstructed, and restrained at the Conference and apparently entertain anxiety, dislike, and excitement from the idea that it means even more to this country than the Triple Intervention. If their attitude is correctly reported, they have neither knowledge nor confidence regarding the object of the Conference or its relations with this country. They are apparently filled with exclusive and noncooperative sentiments. The people have cause for anxiety that the diplomacy of Japan should be directed by such statesmen.

They urge opposition to all modification of internationally accomplished facts, such as the Shantung question, and counsel the withdrawal of the Japanese delegates if China's stand is supported at the Conference by the United States. We believe that the Diplomatic Advisory Council should make best endeavor to accomplish and settle this question and the issue of the 21 demands before opening of the Conference.

Questions of population and food are matters of life and death and every possible effort should be made whenever possible to secure an understanding with the Powers, but at the same time Japan should take into consideration the feelings of the neighboring coun-

try interested in the matter. Intelligent public opinion in Japan is unanimous in believing these problems can only be solved by making the policy toward China and all other measures thoroughly pacific and economic and in such manner developing our trade and industry. What has the Diplomatic Advisory Council done in the past to establish such a policy instead of a colossal policy based on territorial expansion or militarism? The whole people of Japan are justly indignant at racial discrimination on all the shores of the Pacific except Asia, colored people being excluded, and our case on this point should be fully laid before the Conference. But while censuring the arrogance of the whites, the Japanese should at the same time see if there is not discriminatory treatment against Koreans, Formosans, and Chinese amongst themselves. Otherwise their claim will not be one based on firm faith. It is urged that the "open door" and "equal opportunity" is synonymous with race equality. If the Japanese delegates withdraw in case that proposal is rejected, Japan might be the victor in the sense of international morality, but not in the sense of the legal question of treaty, and the result would be greater isolation for her. Japan can not afford to attend the Conference in expectation of increased international isolation.

(Kokumin, 8 September.)

Why does not Japan have sufficient courage stoutly to assert what should be claimed and sufficient generosity to meet the needs of an understanding the other countries when this is advisable? The Japanese race is being subjected to discriminatory treatment by Great Britain and the United States. There are many things to complain of; but why take up a shrinking policy?

(Japan Advertiser, Editorial, 8 September, 1921.)

Japan and America are building the greatest fleets that have ever floated, and Jellico has proposed that 16 capital ships be based on Singapore, because these countries are suspicious of one another's activities in China, because they all talk of the "open door" and all suspect one another of wishing to violate it, each having important (and in Japan's case, vital) commercial interests in a country incapable of defending its rights and is at the mercy of any unscrupulous money lender.

Unless the three countries primarily interested can come to an understanding regarding the future of China, they may economize by partial reduction of building programs, but the unrest and danger of friction will remain. While the naval experts are weighing bases against battleships and covering reams of paper with calculations about ratios, the diplomats will be exploring the far more vital grounds of a common policy for China, the hope of the Conference

being that the Powers will all see the danger of continuing along the same old road and will transform their efforts into a common constructive policy. Is it not logical and practical to assure China that the Powers are ready to take common action in assisting her out of her helplessness and confusion? This assistance should not be forced on China, but if the Chinese were convinced that the agreement we hope will be reached at the Washington Conference was not intended to exploit and subject them, but to prevent their being exploited and subjected, the chances are that they would welcome international assistance under suitable guaranties.

(Admiral Murakami, I. J. N., Commander in Chief, Kure Naval Station.)

Unconditionally approves Disarmament Conference, but declares that restricting armaments will be most difficult. What conditions will govern the arrangements, length of coast line, population, or amount of trade. America and Japan are altogether different geographically. America is self-feeding; Japan is not. Japan largely depends upon other nations for raw materials. Japan must extend abroad, and a Navy is necessary for police duty. The 8-and-8 program is also the minimum of a fighting unit. This huge naval aggrandizement scheme can be made small if all nations really desire the limitation of arms. He advocates complete abolition of arms instead of restriction of Great Britain, America, Japan, and other leading nations really want permanent peace.

(Yorodzu, 9 September, 1921.)

Any plan that may be brought forward by America should not modify the recommendations of the Armament Commission of the Assembly of the League of Nations. If the League Assembly were unable to place any restrictions on armaments, would not it be easy to see what will be the result of the Washington Conference on this point? It is our wish that America take no action at the Conference likely to destroy the principle of the League of Nations. If America has joined the League, the Washington Conference would be unnecessary.

(Dr. Matsunami, in Diplomatic Review.)

Questions the success of Pacific Parley. Business men are too resourceless to project another war. The success of the Conference is dubious, because Great Britain and the United States will not give up their extensive plan of naval armaments. It is regrettable that the United States has provoked fierce contentions among the Powers as to the true scope of the Conference by extending formal invitations under equivocal designation as a Conference on Disarmament, Pacific and Far Eastern Question. He is doubtful, together with the Japanese people and the Government, as to the true purpose of the Conference. Thinks it most advisable that the scope be confined to

disarmament lest pending questions be aggravated and no definite decision be arrived at.

It is very doubtful if the United States Government would accept the decision of the Conference, even if some enduring decision were arrived at. She is still outside the League of Nations, which she originated. And why did she not join the League and through it propose disarmament?

The reduction of Japan's Army is a matter of exclusively internal concern, since it is obvious that it is not so formidable as to justify the alleged censure against the military policy of Japan. A general staff investigation shows that the ratio of the total number of soldiers of the Japanese Army to the total people is 1 to 330; Great Britain, 1 to 200; and the United States 1 to 430. The naval authorities state that the proposed 8-and-8 fleet is the minimum plan for national defense. It is, however, a matter of course that if the enemies of Japan should reduce their armaments, even our minimum plan should be reduced.

The contentions of world politicians and strategists at present center on the question of how Japan can defend herself against the invasion of American fleets. No one discusses the American defense plans. Americans would say that the arrogance of Japan would only result in her international isolation. Some Americans would go so far as to say that an American-Japanese war would mean the instant ruin of Japan. Most Americans believe that the Japanese Navy is no match for the American fleets and doubt if the Japanese Navy could resist an invasion.

Japanese business men are all powerless and have no influential position in Japan in connection with armament. They are too resourceless to project a world war. The resolution passed at the general meeting of the chamber of commerce to urge disarmament was given no respect by public opinion. It is very fortunate for Japan that they are powerless to excite any public opinion supporting an expansion of armaments by Japan. Japanese bankers are still more timid.

(Captain Mizuno, I. J. N., Retired, 10 September, 1921.)

Was placed on retired list in 1920 at own request because he differed from the policy of expansion on which the Navy was embarked. Advocates conditional disarmament. Used to believe that armaments were a guarantee of peace. Changed his mind after a time abroad studying results of World War. The following are his views on disarmament:

No intelligent man will oppose reductions of armaments. All the nations of the world should limit or reduce armaments. The tendency of the world and the conditions of the country contribute to strengthen the opinion that Japan stands to reduce her armaments.

It is wrong to conclude from the defeat of Mr. Ozaki's resolution for naval reduction that the Japanese are opposed to a retrenchment of expenditures on armaments. A remarkable change in the attitude of statesmen as well as the people has come about since the defeat of Mr. Ozaki's resolution, and I am speaking the truth when I say that no sane Japanese disapproves of restriction of armaments. The failure of the Conference at Washington would result in the resumption of armament competition. Can Japan stand competition with such a rich country as America? The outcome of the naval race would be war—America could abandon the Philippines, stand on the defense, and dominate the enemy. Or America might send a superfleet of submarines to defend the Philippines. Japan would have to make a great sacrifice to conquer these islands, and after their reduction Guam and Hawaii must be conquered. Then would come a long-drawn-out struggle. Japan's foreign trade would be seriously obstructed. China would take an attitude of favorable neutrality; England would not assist Japan against America.

(The Far East, 10 September.)

The Washington Conference is chief subject of discussion amongst the people who are always keenly interested in foreign politics where Japan is involved. The reduction by half of the burden at present borne by the leading naval Powers would benefit the whole world and stimulate trade on which we all depend for our prosperity. Japan's concern is not over disarmament—instinctively, the whole nation feels that a political game is being played in which it will be the butt. They never forget some of the outstanding incidents in their intercourse with foreign Powers—as when Germany, France, and Russia compelled Japan to cede Liaohing Peninsula at the close of the Chino-Japanese War. This incident had more to do with the formation of Japan's foreign policy than any other international affair since the opening of the country.

Ostensibly China was then befriended, as she has frequently been since, to her own undoing. Very early China saw that the Powers were moved by mutual jealousy in their relations toward her, and she strove hard, with some success, to play one against the other. She will be the bone of contention at the Conference. She will not be warned to put her house in order or take the consequences. Japan will probably be made to appear the black sheep and a patched-up agreement will be come to, similar to the Finance Consortium, which will not work. There is more war and bloodshed going on in China to-day than in any other country—the foreign flags cover the only scattered safety zones in the vast area. Japanese in China may be very undesirable, but every foreigner would prefer to live under the flag of Japan rather than that of the so-called republic.

(The Far East, 10 September, 1921.) "Disarmament Mirage" (from a Japanese Correspondent).

The Japanese nation as a whole realizes with some fear the hopelessness of Japan as an economic unit, and no amount of Chinese and Bolshevik propaganda nor any pressure from the western Powers can make her part with the fruits of her lawful investments on the Asiatic mainland. The Peking Government demands the retrocession, gratis, of Tsingau with its costly harbor improvements. It is transparent that the sham republic dreams of snatching the splendid South Manchurian Railroad at the point of another man's bayonet. Japan shed sweat as well as blood to achieve her present position. But China does nothing of the sort. She simply tempts one nation to fight with another, enjoying her precarious independence the while (her traditional policy).

If the "causes of irritation" are to be exterminated, the vigorous activities of the professional propagandists and biased missionaries must be put an end to. It may mean a colossal burden of war for our sons and daughters to shoulder. Japan would be incomplete as an economic entity if she were deprived of the advantages she now holds in China, and no amount of unjust pressure or hostile propaganda will force the nation to give them up.

("Jiji," 11 September, 1921.)

Abolish dreadnaughts and restrict navies to defensive units. This is the most logical method of reduction of naval armaments. Abolition of dreadnaughts will reduce the menace of offensiveness in the world. Since it would be difficult to equalize the dreadnaught strength among nations it would be fairer to totally abolish them. This to be accomplished as rapidly as practicable.

(The Japan Chronicle, Editorial, 11 September, 1921.)

The "Mainichi" is evidently perturbed over rumored appointment of Admiral Baron Kato as the head of the Japanese delegation to the Conference, fearing lest it create a bad impression abroad. The nomination is obviously one suggested from naval circles. The Minister of the Navy has enough prestige and enjoys sufficient confidence in the navy to enable him to carry through an agreement on naval questions. Any other delegate would have to wire Tokyo (holding up the proceedings meantime) before taking part in any decision. The naval clique would be very loath to allow naval decisions to be voiced by a civil statesman, and they regard Admiral Baron Kato (the Minister) as able by his unrivaled knowledge of naval affairs and his command of English to present the case better than anybody else for the least possible reduction of Japan's fleet, consistent with reciprocity in a general lessening of armaments. But every reason that can be advocated for his appointment is the measure of the ob-

jectionableness of such an appointment from the point of view of such foreign delegates as come to Washington with a genuine desire to find some method of substituting mutual trust for competitive armaments. A Minister of Navy must play for the greatest advantage accruing to his service. It is impossible for him to approach the question from any other point of view. It is doubtful whether there are half a dozen public men in Japan who wish the question aproached otherwise.

(Yomiuri, 13 September, 1921. "Emigration and the Open Door.")

Some people think that the open door and equal opportunity mean equality of races. Japan's demand for the open door and equal opportunity on the other side of the Pacific refers to freedom of Japan's commercial enterprises in Mexico and Central and South America. It is right and just. But equality of races in the sense of immigration into the United States is impracticable, and it would be futile to urge it, however strongly. Though Japan is suffering from excess of population, there are other means of disposing of the surplus population than by emigration to the United States. Nearer home is Manchuria, Mongolia, and the South Seas, and further afield, Brazil. The United States is within its rights in prohibiting the entrance of Japanese laborers, just as Japan does not like Chinese laborers and prohibits their entrance. Immigration is not the only object of the principle of race equality. Beyond it are other matters deserving of great attention, i. e., the question of special treatment for the Japanese in regard to the right of naturalization and land ownership.

Japan would make a mistake in insisting on the open door in the United States as a means of solving her problem of surplus people. There would be little chance for success and there is no need for such action. Japan would do better to ask for a speedy solution of the California question as a *quid pro quo* for the strict observance of the gentleman's agreement, thus eliminating one of the causes of Japan-American disputes.

(Yomiuri, 13 September, 1921. "Revise or Cancel the 21 Demands.")

One of the principal reasons for Chinese opposition to direct negotiations concerning Shantung is the fact that the Shantung Treaty forms part of the 21 demands. If China did not oppose them, she would herself undermine the basis of her contention. Whether or not China was compelled to agree to the 21 demands by intimidation, this has become a fixed conception of the Chinese. This is a great question, calling for urgent attention. The Government and people should carefully consider the issues involved and make a decision taking into account the larger point of view regarding the situation between China and Japan, as well as the actual interests involved.

(Yamato, 15 September, 1921.)

The Japanese Government may be hurrying to dispose of the Shantung question, fearing lest the issue be brought before the Washington Conference. But such an attitude shows a total lack of self-confidence. Why should we fear for this matter to be brought up there if we have confidence in ourselves? Whether it be the Siberian or the Tsingtau question we do not need to make haste toward a solution before the Washington Conference. We should maintain our dignity and give expression to the principle of an Asiatic Monroe Doctrine.

(Chugai Shogyo, 15 September, 1921.)

The economic principle of reduction seems most popular so far—referring to percentages of national revenues. We think it too idealistic and would prefer something more practical. The Japanese idea appears to consist in regulating naval armaments on the basis of the smallest naval power, removing all defences on islands and rendezvous for fleets. The Japanese Government will maintain that they will not stop the already decided plan of construction.

(15 September, 1921.)

Mr. Inukai, president of the Kokuminto Party, at a general meeting of the party on 12 September, advocated the abandonment of all rights and concesisons enjoyed by Japan in China, which are considered an obstruction in the way to friendly relations with the rest of the world. After pointing out that the Conference will offer Japan a golden opportunity of explaining the aims of her policy he said that the problem of overpopulation and other economic questions arising therefrom will be capable of a solution once an understanding regarding her policy is reached. Japan was once administrated by advocates of militarism, but to-day there is no single military man who seriously believes in territorial conquest and domination over other races.

Japan's best interests will be advanced by dealing with China fairly and straightforwardly. Once China is friendly, Japan will have nothing to fear from foreign competition there. The strong economic power possessed by foreigners will be offset by the various advantages Japanese enjoy as the result of intimate knowledge of the Chinese and things Chinese.

Mr. Inukai is esteemed an authority on China.

(The Jiji, 15 September, 1921.)

Some people are opposed to land disarmament on the ground that it is not such a menace to peace as naval armaments. In order to remove the suffering of a dual diplomacy Japan must curtail military as well as naval expenditures. This is also advisable from a standpoint of the nation's finances.

(The Yomiuri, 15 September, 1921.)

Any attempt to restrict armament competition without reaching an understanding on fundamental foreign policies will prove a complete failure. The discussion of Far East and Pacific questions is imperatively necessary in order to render an agreement on armament limitation permanently secure.

(The Jiji, 16 September, 1921. "Army Reduction Necessary.")

The Nation, regardless of party differences, should study how to make the Washington Conference a success. Army as well as Navy reductions should be considered. Japan should be the first nation to reduce her army—independently. It will show the world that Japan is not militaristic. Keep the militarists under control, cure the political poison they scatter, and remove the oppression under which the people have long suffered. This will also have a beneficial result on the national finances. It is clearly necessary to make a drastic cut in the gigantic army organization which is the fundamental cause of the tyranny of the militarists. Under present conditions every intelligent person recognizes that 21 demands are too much. The Government authorities are urged to act resolutely.

(Japan Advertiser, 17 September, 1921.)

Opposition to the appointment of Admiral Baron Kato, Minister of the Navy, as chief of the Japanese delegates to the Disarmament Conference has been gaining strength amongst members of the House of Peers, and is threatening to develop into a serious question connected with the system of administrative organization. It is generally believed that the Premier will be charged with handling the Office of Naval Affairs if Admiral Kato goes to Washington. Those who oppose the appointment of the Admiral hold that is dubious whether the departments of navy and army belong to the administrative government or not. The heads of the two departments occupy a position radically different from that of the other Ministers. Even if the Premier held the office of Acting Minister of the Navy during the absence of Admiral Kato, it remains to be decided whether he will be authorized to take charge of those special matters relating exclusively to the navy. The naval authorities in general seem to be against substituting the Premier for the Admiral. In official circles the question is regarded as a grave one, affecting the fundamental points of the Japanese Constitution.

(Jiji, 17 September, 1921. "What About Army Reduction.")

Reduction of armaments includes reduction of army as well as navy. The 21 demands should be reduced by one-half and not increased to 25. The Japanese delegates should have a definite policy in regard to this matter.

(Kokumin, 17 September, 1921. "To Try Japan.")

The Pacific Conference is a court of law to judge Japan. Our diplomats may understand the atmosphere of England or America, but they do not understand the atmosphere of Japan. They have forgotten that Japan should take an independent and original position. The Government seems to be doing its best to make Japan and China dependencies of England or America, but such procedure will never satisfy the Japanese who have backbones.

(Jiji, 20 September, 1921.)

A wise nation would make amends for wrongs committed in the past. Japan should at once withdraw her troops from Siberia and Shantung. The Government's actions show a state of unpreparedness on its part. The people universally desire limitation of armaments.

(The Times and Mail, 19 September. "The 'Seven Professors' Manifesto.")

Japan calls upon America to abandon much when she demands the principle of disarmament for the Pacific islands. The United States has extensive plans for completing the defenses of Hawaii, upon which many millions have been spent. America has a great base at Manila, and plans are on foot for the fortification of Guam. Advanced naval bases may be regarded logically as more "offensive" than "defensive" and therefore to be amongst offensive armaments to be limited. Peace is best assured by making war impracticable. Without bases, the two navies can not menace each other greatly. In the matter of bases Japan would abandon much less than America—a proper *quid pro quo* for the greater abandonments Japan is asked to make on the Asiatic mainland.

The Panama Canal is already internationalized to the limit of all requirements, and America would not abandon its defenses, which are defensive, pure and simple.

(Nichi Nichi, 21 September, 1921. "Precedent Must Go.")

If the Conference is to be made a success, the issue should not be left to the few delegates alone. It should be made an issue of the people of the different nations and the Governments whipped into action by the force of public opinion. Armaments limitation is a universal outcry of the civilized world; the civilized nations should unite in helping to make the Conference a success.

(Asahi, 22 September, 1921. "Kato Opposed as Delegate.")

The appointment of the Admiral would give other nations cause to suspect that Japan means to defend the position of her Navy from the technical point of view. Count Uchida should go if the Premier can not. Japan should face the conference with the peace of the world, the welfare of humanity, and justice in international relations as the final goal.

(Chuo, 22 September, 1921.)

The diplomacy of to-day needs sincerity and straightforwardness and simplicity rather than niceties and formalities. It should be conducted in regard to the welfare of the people. The Government authorities should declare their views frankly and fearlessly and adjust what is not proper and not indulge in trading or petty tricks. Troubles arise as a matter of course in international relations. They should not be feared. We should put forward our views and freely exchange them with those of others.

LIMITATION OF ARMAMENTS — JAPANESE DELEGATES TO WASHINGTON CONFERENCE.

Source: Reliable.

(14746–B.)

23 September, 1921.

Unless something most unusual transpires in the very near future Admiral Baron Kato, Minister of the Navy, will be Japan's chief delegate to the Washington Conference.

He not only expects to go, but to be the head of the delegation, having declined to attend in any other capacity. He will go as a cabinet minister and not as a naval officer or in connection with the naval delegation.

Capt. K. Nomura, the present A. D. C. to the Minister of the Navy, is going as Admiral Kato's personal aide and not as a naval officer or in connection with the naval delegation. Capt. Shinjiro Imamura has been ordered as Capt. Nomura's relief in the Navy Department. A young civilian has also been selected to go as the Admiral's private secretary (T. Komatsu).

Admiral Kato's selection as head of the delegation has not been accepted by the press as final, and, as was to have been expected, has resulted in considerable adverse press criticism. The objections advanced, however, have in no cases been of a personal nature. The sole objection is based on sending a professional militarist to a disarmament conference. And the press points out that he not only remained in the cabinet in the Terauchi Ministry (one of the most militaristic in recent Japanese history), but that it has been due largely to his (Kato's) efforts that the present naval expansion is being carried out.

This office believes the chances are nine in ten that Admiral Kato will not only head the delegation, but that he is probably the ablest man in Japan to accomplish the mission. It is positively known that the leading Japanese business men, bankers, and liberal intellectuals of Tokyo look upon his probable selection most favorably.

He is, it is safe to say, unanimously considered by far the ablest cabinet member, excluding, of course, the Premier.

At the time of the "naval scandal" he was selected as Minister of the Navy to reestablish morale and prestige. This he has accomplished most admirably.

He is a quiet, reserved, but most astute gentleman, who almost always appears to be deeply engrossed in thought. He asks few questions, but they are always brief and to the point.

Although he conveys the impression of being frank by his quick answers to questions, they are short and usually evasive.

He is a man of decidedly independent thought and consequently forms his own opinions on all subjects. (In this connection, particular attention is called to "Japan's chief disarmament objective.") But he is of such a quiet, reserved, and secretive nature that very little is actually known about his opinions. However, he is believed to be a fair and liberal minded man open to conviction and not of the usual Japanese narrow-minded, militaristic, antiforeign stamp.

He has been loyal and helpful throughout to the foreign office in its struggle with the Army General Staff, and it is thought that due principally to his efforts in this direction an open break between the foreign office and the Army General Staff has been averted.

There is good ground for thinking that he believes Japan's regular standing army can with safety, and should be, reduced by half. He is probably one of the few men in Japan who can exercise any semblance of control over the army delegation—certainly no foreign office delegate could hope for this.

He understands English, but does not speak it fluently, which can be turned to his own advantage.

In short, he is an extremely clever man, whose capabilities should be overestimated rather than underestimated in order to be on the safe side.

He will be unable to absent himself from Tokyo for more than three months, and figures on leaving America about the end of December.

Captain Nomura is one of the best younger men Japan can send to America. He is frank, honest, broad-minded, level-headed, and outspoken. As a result of the courtesies shown him during his three years as naval attaché in Washington, he feels most friendly and grateful not only toward Americans in general, but toward naval officers, especially Admirals Benson and Pratt and Capt. McNamee. He admires the United States to the extent that he intends educating his son there.

His influence over Admiral Kato will undoubtedly be greater than that of any other one man, and our own naval officers should be able to use this to good advantage.

At present Capt. Nomura believes that no radical reduction can be hoped for, that certain future limitations can and should be agreed upon, but that the principal goal to strive for is the dispelling of international jealousies, suspicions, and distrusts, thereby laying a solid foundation on which to gradually build future friendships that will in turn automatically result in limitation of armaments. He realizes that if the conference fails to accomplish its mission the resultant international situation will be more aggravated than at present, which he believes will be a serious menace to both America and Japan. Capt. Nomura was partially responsible for the selection of the naval delegates. The naval officers who represented Japan at the League of Nations asked to be sent to Washington as being familiar with the subject of disarmament. Their requests were refused on the ground that their efforts toward disarmament have totally failed and that they will be prejudiced and endeavor again to pursue their former policies. The navy department believes it is better to make a new start and for this reason selected new delegates.

The name of the man selected as Admiral Kato's private secretary is not known but will be forwarded later.

He is said to be an unusually pleasant and a very bright young man who speaks English fluently. He lived in America for several years and graduated from a university in Indiana. He is private secretary to Mr. Asano, the owner of the Toyo Kisen Kaisha and many other big enterprises in Japan.

The secretary stated that he was practically drafted to go as Admiral Kato's secretary.

His influence will of course be very little, but if he is as clever as reported he should not be entirely overlooked.

The other members of the Japanese delegation are still unannounced and more or less of a guess. They will not be definitely announced until after Great Britain has designated her delegates. Mr. Hanihara, vice minister of foreign affairs, will more than likely attend in somewhat of an advisory capacity. He is very well known in Washington. The statements of August are those made by Mr. Hanihara during a private conversation.

The following additional information on the naval delegates is as follows:

Vice Admiral H. Kato.

He is a very heavy drinker, which is developing into a severe weakness. When under the influence of drink is a severe critic of both his seniors and juniors. Is quite fearless and does not hesitate to attack both seniors and juniors personally. Entertains Japanese naval officers frequently, and almost invariably ridicules them, in his own house, seriously when drunk, jokingly when sober. For the above

reasons he is gradually losing his former popularity with both older and younger officers.

Capt. Yamanashi.

Was at one time an instructor at the Naval War College. Will probably be made a rear admiral in December, this year.

Capt. Suyetsugu.

Is now in the planning section of the Naval General Staff. His career has been principally staff duty, and he is essentially a staff officer.

Commander Hori.

Is assistant to Capt. Yamanashi in the Bureau of Naval Affairs (operations). Speaks French and English.

Lieut. Commander Kuragano.

Is the junior aide to Admiral Yamashita, Chief of the Naval General Staff. Studied in England, speaks English, and was selected for this reason. Is a very quiet, reserved, and abstemious person.

Lieut. Kuwahara.

Is a qualified aviator and one of the best naval aviators in Japan. Graduate of Yokosuka Aviation School and also of a British flight school. Studied in United States or England and speaks English. Has already sailed for the United States.

Engineer Lieut. Mito.

Is an instructor at the Naval Engineering College. Studied three years at Harvard and speaks English well. Has already sailed for the United States.

Constructor Lieut. Commander Taji.

Studied naval construction five years in England, three of which were spent at the Royal Naval College (Greenwich). Is married to an English girl and speaks English fluently.

All of these younger officers, from Commander Hori to Lieut. Commander Taji inclusive, were selected because of their knowledge of English and to act as advisors in case any technical subjects came under discussion. They will have little or no influence in determining policies.

Regarding Maj. Gen. Tanaka, the chief army delegate, the same Japanese bankers, business men, etc., who look upon Admiral Kato's selection so favorably, are bitterly opposed to Gen. Tanaka's selection and consider it a great misfortune. They state that he is a reactionary militarist, very antiforeign and anti-American; that the army's security and power depends upon its being maintained at present and that Gen. Tanaka will oppose any proposed reduction or change in the present status. They believe that he will report

directly to and receive instructions directly from the Army General Staff in Tokyo, thereby practically ignoring the chief delegate.

A strenuous effort is, however, now being made to unify the Foreign Office, War and Navy Departments, and coordinate the efforts of the various delegations. To this end three joint meetings have already been held by the above-mentioned departments for the discussion of policies, etc.

The following is a letter to the Director of Military Intelligence, regarding the Japanese military delegate to the Washington Conference:

"1. While it has not been officially announced, it is practically certain that Maj. Gen. K. Tanaka, Chief of the Second Section, General Staff, will be the Japanese military delegate or advisor at the Washington Conference. Gen. Tanaka was military attaché to both London and Washington and was attached to Gen. Pershing's staff when Gen. Pershing visited Japan in 1912. He speaks English very well, but not well enough to be able to follow a speech, for example. He has a pleasant and rather likeable personality and would make a good impression when meeting foreigners.

"2. It would appear that they are two reasons for Gen. Tanaka's appointment. First, because he is Chief of the Information Section of the General Staff and is, therefore, very familiar with Far Eastern questions; and, second, in my estimation, he is the dominating figure in the so-called Military Party and the director of the so-called Military Diplomacy. In making that statement I have no evidence except my own judgment. Gen. Tanaka is a very forcible man and a very reticent one. He talks very little on official subjects and very little of information or of his opinions can be extracted from him. He has more to say after a dinner party, for example, than when in his office.

"3. Although Gen. Tanaka will, perhaps, be designated simply as military advisor to the Japanese delegates, it is well to bear in mind that he is there as the representative of the Military Party, which has, of course, a very strong position in Japanese politics. It is not likely that the delegates would arrive at any decision which Gen. Tanaka opposes. In my opinion his views on Far Eastern questions will, to a large extent, be the views of the delegates themselves. He would not oppose a limitation of naval armament, but would oppose anything which would cut down the power or prestige of the army. As he is an expansionist he will, of course, support the *statu quo* as far as Japan is concerned on the Asiatic mainland. It is possible that Gen. Tanaka's views on any subject might be found out better from Maj. Gen. Haraguchi, the present military attaché in Washington, than from Gen. Tanaka himself."

MANDATE TERRITORY, AREA, and POPULATION.

Source: Compiled From Various Entries in Statesman's Year Book, 1921.

	Population.	Area.
BRITISH MANDATES:		*Square miles.*
Cameroons	400,000	30,000
Togoland	367,000	12,500
Tankanyiks	7,277,000	365,180
Nauru (small South Pacific island)	.....	.....
Mesopotamia	2,849,282	143,250
Palestine	647,850	9,000
SOUTH AFRICAN MANDATES:		
Southwest Africa	200,000	322,400
AUSTRALIAN MANDATES:		
New Guinea (German)	200,000	700,000
Bismark Archipelago	188,000	15,000
Solomon Islands	17,000	4,000
NEW ZEALAND ISLANDS:		
Western Samoa	41,128	1,260
FRENCH MANDATES:		
Cameroons	2,140,000	166,489
Togoland	733,000	21,200
Syria	3,000,000	60,000
BELGIAN MANDATE:		
Ruandi and Urundi (German East Africa)	383,000	19,000
JAPANESE MANDATES:		
Marianne Islands (Ladrone)	5,392	.....
Caroline Pelew Islands	9,555	.....
Marshall Islands	9,008	.....

November, 1921.

NAVIES OF THE WORLD POWERS.

TABLE I.

CHARACTERISTICS.

Battleships, First Line.—All big battleships carrying a broadside of at least 10 guns of 12-inch or larger, displacing at least 20,000 tons, and having a speed of 20 knots or more.

Battleships, Second Line.—Those all big-gun battleships not equal to the qualifications of battleships, first line, and also mixed-caliber battleships launched after 1 January, 1901. Speed, 15 to 20 knots.

Battle Cruisers, First Line.—Those battle cruisers carrying 13.5-inch guns or larger, and capable of making a speed of at least 27 knots.

Battle Cruisers, Second Line.—Those battle cruisers carrying 12-inch guns and not capable of making 27 knots speed.

Cruisers, First Line.—Those large fast cruisers capable of keeping station in the battle fleet and launched after 1 January, 1901.

Cruisers, Second Line.—Those cruisers launched after 1 January, 1901, but not equal to the standards of cruisers, first line.

Light Cruisers, First Line.—Those light cruisers having a speed of 27 knots or more and launched after 1 January, 1901. They are capable of keeping the sea with the fleet. Displacement, 4,000 to 8,000 tons.

Light Cruisers, Second Line.—Those light cruisers launched after 1 January, 1901, having a displacement of 4,000 to 8,000 tons, which are not equal to the duties of light cruisers, first line.

Destroyer Leaders.—Must have a speed of at least 30 knots, displace at least 1,500 tons, and carry guns of 5-inch or 6-inch caliber.

Destroyers, First Line.—Those destroyers launched after 1 January, 1906, displacing 800 tons or more, and capable of a speed of 27 knots.

Destroyers, Second Line.—Those destroyers launched after 1 January, 1906, displacing 500 to 800 tons, and capable of a speed of 25 knots.

Submarines, First Line.—Submarines launched after 1 January, 1906, displacing 500 to 1,000 tons, and having a speed of 13 knots or more. They carry 3-inch or 4-inch guns.

Submarines, Second Line.—Submarines launched after 1 January, 1906, displacing 300 to 500 tons, with a speed of 13 knots or more. Guns are less than 3-inch.

Fleet Submarines, First Line.—Fast submarines launched after 1 January, 1906, displacing at least 1,000 tons, having a speed of at least 20 knots, and carrying 3-inch or heavier guns.

Fleet Submarines, Second Line.—Submarines launched after 1 January, 1906, displacing 1,000 tons or more, a speed less than 20 knots, but having at least 3-inch guns.

Cruiser Submarines.—Long-range submarines launched after 1 January, 1906, displacing at least 2,000 tons, having a speed of at least 16 knots, and possessing guns of 6-inch or better.

Monitor Type Submarines.—A special type carrying a 12-inch gun.

Aircraft Carriers.—Ships with a speed of at least 20 knots fitted with a deck from which planes can take off and on which planes can land.

TABLE II.

1 November, 1921.

BRITISH NAVY.

Class.	Built.		Building.	
	Number.	Tons.	Number.	Tons.
Battleships, first line	26	635,650	.....	.....
Battleships, second line	6	110,650	.....	.....
Battle cruisers, first line	6	175,400	4	160,000
Battle cruisers, second line	4	72,100	.....	.....
Cruisers, first line	2	37,200	.....	.....
Cruisers, second line	4	46,100	.....	.....
Light cruisers, first line	45	198,945	4	29,030
Light cruisers, second line	14	74,465	.....	.....
Destroyer leaders	20	34,376	1	1,750
Destroyers, first line	237	258,022	3	4,010
Destroyers, second line	15	10,868	.....	.....
Submarines, first line	64	49,197	5	4,590
Submarines, second line	59	23,743	.....	.....
Fleet submarines, first line	14	26,320	.....	.....
Fleet submarines, second line	6	7,200	.....	.....
Cruiser submarines	1	2,014	.....	.....
Monitor-type submarines	3	4,800	.....	.....
Aircraft carriers, first line	4	67,200	.....	.....
Aircraft carriers, second line	3	26,130	.....	.....
Total	533	1,860,480	17	199,380

TABLE III.

1 November, 1921.

JAPANESE NAVY.

Class.	Built.		Building and projected.		Remarks.
	Number.	Tons.	Number.	Tons.	
Battleships, firs t line	6	178,320	7	289,000	3 building; the other 4 are authorized.
Battleship, second line	4	71,500			
Battle cruisers, first line	4	110,000	8	352,000	2 building; other 6 are authorized.
Battle cruisers, second line					
Cruisers, first line					
Cruisers, second line	5	59,200			
Light cruisers, first line	9	43,850	14	84,500	Probably all building.
Light cruisers, second line	1	4,100			
Destroyer leaders					
Destroyers, first line	40	41,328	32	31,820	
Destroyers, second line	12	7,850			
Submarines, first line	15	11,500	12 11	10,368 16,500	Number and tonnage are not accurately known.
Submarines, second line	3	1,050			
Fleet submarines, first line					
Fleet submarines, second line					
Cruiser submarines					
Monitor-type submarines					
Aircraft carriers			1	21,000	
Totals	99	528,698	85	805,188	

TABLE IV.

1 November, 1921.

FRENCH NAVY.

Class.	Built.		Building and projected.		Remarks.
	Number.	Tons.	Number.	Tons.	
Battleships, first line	7	161,911			Abandoned.
Battleships, second line	7	122,012			
Battle cruisers, first line					
Battle cruisers, second line					
Cruisers, first line					
Cruisers, second line	7	89,472			
Light cruisers, first line	4	17,802	3	24,000	Not begun.
Light cruisers, second line	1	3,444			
Destroyer leaders			6	14,400	Authorized; not begun.
Destroyers, first line	11	10,373	12	14,800	Authorized, but not begun.
Destroyers, second line	36	25,357			
Submarines, first line	18	13,449	12	13,200	Have been authorized, but not begun.
Submarines, second line	47	18,536			
Fleet submarines, first line					
Fleet submarines, second line					
Cruiser submarines					
Monitor-type submarines					
Aircraft carriers			1	24,830	The former battleship Bearn will be converted to an aircraft carrier.
Total	138	462,356	34	91,230	

TABLE V.

ITALIAN NAVY.

1 November, 1921.

Class.	Built.		Building and projected.		
	Number.	Tons.	Number.	Tons.	Remarks.
Battleships, first line	4	89,170			
Battleships, second line	5	68,890			
Battle cruisers, first line					
Battle cruisers, second line					
Cruisers, first line					
Cruisers, second line	3	31,228			
Light cruisers, first line	5	20,678			
Light cruisers, second line					
Destroyer leaders	1	2,485			
Destroyers, first line					
Destroyers, second line	29				
Submarines, first line					
Submarines, second line			2	788	
Fleet submarines, first line					
Fleet submarines, second line					
Cruiser submarines					
Monitor-type submarines					
Aircraft carriers					
Total					

TABLE VI.

UNITED STATES NAVY.

1 November, 1921.

Class.	Built.		Building and projected.		
	Number.	Tons.	Number.	Tons.	Remarks.
Battleships, first line	18	500,650	9	357,000	
Battleships, second line	15	227,740			
Battle cruisers, first line			6	261,000	
Battle cruisers, second line					
Cruisers, first line					
Cruisers, second line	10	131,300			
Light cruisers, first line			10	75,000	
Light cruisers, second line	3	11,250			
Destroyer leaders					
Destroyers, first line	293	348,247	4	4,860	
Destroyers, second line	21	15,582			
Submarines, first line	57	34,641	37	32,118	
Submarines, second line	44	16,735			
Fleet submarines, first line	3	3,318	3	4,950	
Fleet submarines, second line					
Cruiser submarines					
Monitor-type submarines					
Aircraft carriers					1 collier being converted to an experimental aircraft carrier; can not be classed as a modern ship.
Total	464	1,289,463	69	357,000	

TABLE VII.

BRITISH, JAPANESE, AND UNITED STATES FIRST-LINE CAPITAL SHIPS.

1 November, 1921.

	Great Britain.		Japan.		United States.	
	Number.	Tons.	Number.	Tons.	Number.	Tons
Battleships, first line	26	635,650	6	178,320	18	500,650
Battle cruisers, first line	6	175,400	4	110,000	.....	.....
Total	32	811,050	10	288,320	18	500,650

TABLE VIII.

BRITISH, JAPANESE, AND UNITED STATES FIRST-LINE CAPITAL SHIPS CARRYING 13.5-INCH GUNS OR LARGER.

1 November, 1921.

	Great Britain.		Japan.		United States.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.
Battleships, first line	22	548,250	5	157,520	12	365,000
Battle cruisers, first line	6	175,400	4	110,000	.....	.....
Total	28	723,650	9	267,520	12	365,000

TABLE IX.

BRITISH, JAPANESE, AND UNITED STATES CAPITAL SHIPS OF THE FIRST LINE, CARRYING 13.5-INCH GUNS OR LARGER, AT END OF 1923.

[Provided present programs are complied with.]

	Great Britain.		Japan.		United States.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.
Battleships, first line	22	548,250	8	258,920	21	722,000
Battle cruisers, first line	6	175,400	8	270,000	6	261,000
Total	28	723,650	16	528,920	27	983,000

TABLE X.

BRITISH, JAPANESE, AND UNITED STATES CAPITAL SHIPS OF THE FIRST LINE, CARRYING 13.5-INCH GUNS OR LARGER, AT END OF 1927.

[Provided present programs are complied with.]

	Great Britain.		Japan.		United States.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.
Battleships, first line	22	548,250	12	418,920	21	722,000
Battle cruisers, first line	10	335,400	12	446,520	6	261,000
Total	32	883,650	24	865,440	27	983,000

Approximate tonnage.

TABLE XI.

NAVIES OF THE WORLD POWERS IN VESSELS OF THE FIRST LINE.

1 November, 1921.

Ships.	Great Britain.		Japan.		France.		Italy.		United States.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.
Battleships	26	635,650	6	178,320	7	161,911	4	89,170	16	435,750
Battle cruisers	6	175,400	4	110,000	.....	.....	.....	.....	.....	.....
Cruisers	[1] 2	37,200	.....	.....	.....	.....	.....	.....	.....	.....
Light cruisers	45	198,945	9	43,850	4	17,802	5	20,678	.....	.....
Destroyer leaders	20	34,376	.....	.....	.....	.....	1	2,485	.....	.....
Destroyers	237	258,022	40	41,328	11	10,373	12	14,295	293	348,247
Submarines	64	49,197	15	11,500	18	13,449	11	7,656	57	34,641
Fleet submarines	14	26,320	.....	.....	.....	.....	.....	.....	3	3,318
Cruiser submarines	1	2,014	.....	.....	.....	.....	.....	.....	.....	.....
Aircraft carriers	4	67,200	.....	.....	.....	.....	.....	.....	.....	.....
Total	419	1,484,324	74	384,998	40	203,535	33	134,284	369	821,956

[1] *Courageous* and *Glorious*.

TABLE XII.

GUNS ON BROADSIDES OF CAPITAL SHIPS OF FIRST LINE.

(Ships of Table VII.)

1 November, 1921.

	Great Britain.	Japan.	United States.
12-inch	44	8	64
13.5-inch	144	.....	.....
14-inch	.....	80	124
15-inch	100	.....	.....
16-inch	.....	8	8
Total	288	96	196

TABLE XIII.

SHIPS NOT EQUAL TO THE STANDARDS SET FOR VESSELS AS IN TABLE, BUT LAUNCHED WITHIN THE DATES OF TABLE I.

Ships.	Great Britain.		Japan.		France.		Italy.		United States.	
	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.	Number.	Tons.
Cruisers							1	7,234		
Light cruisers			2	6,840						
Destroyers			33	17,606	23	8,871	10	3,942		
Submarines			6	1,686			53	11,203		
Aircraft carriers									1	[1] 19,360
Total			41	26,132	23	8,871	64	22,379	1	19,360

[1] *Langley.*

TABLE XIV.

NAVAL ESTIMATES FOR THE YEAR 1921–22 AT THE STANDARD (NOT CURRENT) RATE OF EXCHANGE.

	Foreign money.	United States money.
Great Britain	90,872,300 pounds	$443,168,183
Japan	670,117,411 yen	334,053,529
France	1,034,550,713 francs	200,662,287
Italy	406,161,803 lire	78,389,226
United States		410,304,849

Pound	$4.8665
Yen	.4985
Franc	.193
Lire	.193

CHINESE NAVY—SHIPS BUILT.

Light Cruisers.

Name.	Tons.
Chao Ho	2,600
Ying Jui	2,750
Hai Chi	4,300
Hai Chen	2,950
Hai Yung	2,950
Hai Chou	2,950

Destroyers.

Three destroyers, displacing 390 tons each.

Torpedo Boats.

4 displacing 96 tons.
2 displacing 90 tons.
2 displacing 62 tons.

In addition to the above list there are a number of miscellaneous vessels.

RUSSIAN LABOR CONDITIONS.

Source: Fairly Reliable.

(14230.)

8 September, 1921.

The following is a report by the master on a trip of the Dutch steamer *Zwijndrecht* to Petrograd:

After a stormy journey we arrived yesterday off Narva, and when also this afternoon the starboard anchor was lost we were of opinion that we could no longer lie in the roadstead; we are now, after the doctor had stated that everything was all right, ready for taking wood. The local agent was just on board the ship and I sent you a telegram stating that any business relations with Petrograd are hopeless on account of the Soviet authorities and that all of the previous firms ceased to exist; export goods are not available; living conditions are bad; maximum discharge, 350 tons per day.

We took the Cronstadt pilot in the Narva Bay near the Priemmy Lightship, who brought us in eight hours to Cronstadt through a properly marked channel; this piloting only takes place in the day. After we moored there for half an hour the vessel was cleared by the port authorities; we were received by a band of a man-of-war lying there; we then went up the canal to Petrograd, where we moored at 5.30 p. m. on Sunday, July 17. The ship was cleared on board by the port commander, assistant, customs officials, pass controller, and interpreter, all of which were Bolshevists.

On Monday morning they started discharging the vessel. The unloading went on very slowly; only the foreman, who has nothing to say on account of everybody enjoying the same rights, understands his work. Discharging was done in two shifts from 8 to 3 and from 4 to 9 p. m. The first day 300 tons were discharged, the second day 350 tons were taken out, and so they went on until Friday afternoon. The sheds and berths are in good condition, and there is sufficient water in the new harbor. As is already known, the towing service, pilotage, and port duties are free. Wages of a transport worker, 7,000 roubles (1 loaf costs 5,000 roubles), 1.5 pound of bread per day, 3 herrings per month. A little sugar and rice and daily a little milk for children. It is impossible to live on this and therefore every laborer at the harbor "steals" 5 pounds of flour and a few herrings. Nobody is allowed to come on board the ship except people connected with her; she is watched by two soldiers and two controllers. When the passport control was finished, the crew was allowed to go ashore and to the city, which was reached with much trouble; it took them an hour by tramway to get there. After August 1 the tram fare

will cost 250 roubles. Motor cars and other vehicles are reserved for the municipal authorities. On our arrival the following ships were in dock: *Prussia*, loaded with flour; *Margarete*, with herring; *Cabo II*, with agricultural machines; *Herbert Horn* and *Lisbon* (all German vessels); further a Danish vessel, the *Kirsten Maersk*, with flour; the *Formina* (Dutch), with cokes, the *Vignari* (Swedish), with sugar. Later on the German tug boat *Adana* arrived there with two lighters laden with rails, and also the *Grim* with flour, and the *Dortmund* with rails, which all went back in ballast except the *Cabo*, *Herbert Horn*, and *Lisbon*, which took prisoners of war and refugees to Stettin. The *Cymric Queen* unloaded American coal in the coal harbor; this latter is full of sunken ships, especially timber lighter and prams; along the banks everything is in bad condition because no work is being performed. In the harbor there are also lying 15 to 20 vessels and cruisers, torpedo boats, submarines, and the ice breaker *Jormak*, all ready for sail. The city looks very sad. The wooden houses and partly also brick houses have been broken down in order to get fuel. All shops are closed, except a few watch stores, hatters and toy shops which are allowed to be opened again, and also a few cafés. Men wear old uniforms, women patched clothes, everything looks very bad, and people look famished and emaciated. Factories are closed and everything that could be used having been dismounted. The number of unemployed increases every day. They are gradually put to work by repairing streets; work does not get on, everybody being lazy. Dirt lies in the streets in front of the houses. Bourgeoisie, which are still living concealed in the city and who refuse to work for the Government, are very badly off. Many have been killed and a great number sought refuge in the country. Prices of foodstuffs are very high, the currency having no value. 1 pound of butter costs 28,000 roubles; 100 cigarettes, 1,000 roubles; a suit (worn), 500,000 to 600,000 roubles; a horse, 5,000,000; a cow 7,000,000 roubles, Soviet currency. Markets are again allowed to be held, where, at usurious prices, the first necessities of life may be obtained. The daily needs of a family of four require an outlay of 1,000,000 to 2,000,000 roubles a month, apart from the foodstuffs distributed by the municipality. All industrial works are closed, and with much trouble I succeeded in locating an acquaintance of my father-in-law. Ship-brokers' firms have also been closed, and no business can be done under the present circumstances. As the authorities, owing to the absolute stupidity of the masses, are firmly holding the reins of Government in hand, it is impossible to tell when a change will set in.

SOCIAL CONDITIONS IN JAPAN.

Source: Reliable.

(11556–D.)

9 September, 1921.

["The Harvest of Japan," by C. Gogue Luffmann.]

Since submitting the above report, a book, entitled "The Harvest of Japan," by C. Bogue Luffmann, has come to my attention. The author is stated to be an agriculturist of considerable experience.

Chapter XIX is quoted below, in part, as bearing directly on the overcrowded condition of Japan:

"The most astonishing feature of Japan is that the vast bulk of the country is in a state of nature. Hundreds of thousands of square miles of accessible and well-favored hill country lie unpeopled and unproductive. Only where a region is convenient as a shrine or place of pilgrimage do the Japanese make any effort to occupy the hills. Nikko and Nara are examples; also they prove that the earth is good, and the situation capable of producing a sturdier and higher type of humanity than is possible to the low country. To call this neglect of the land a mistake is too mild a term; it shows the Japanese destitute of the first principles and aims of agriculture, or, overborne by customs and fetishes of various kinds, it matters not which, while the fact stands that they remain in a general way destitute amidst enormous and inexhaustible potential wealth.

The Japanese publicist complains that his country is overcrowded and that room must be found abroad. If it is true that Japan has 60,000,000 of people (which, respectfully, I incline to doubt), there is room for them multiplied by three or four, and no crowding. Japan has only to figure out the areas, occupied and unoccupied, to discern if she is more dense in body than in mind. From a European standpoint, Japan is a fairly large country, and there is no single area in Europe of equal size favored severally and jointly with a better geological or soil base, rainfall, and climatic advantages for farming and the general industries of the land."

Japan squares at about 1,200 by 200 miles, or two-thirds of the size of France, or one and two-thirds the size of Great Britain. Assuming that all the land may be put to a profitable use up to at least 3,000 feet elevation—and a great portion of southern Japan may be utilized up to 4,000 or 5,000 feet elevation—the native field open for settlement and development is vast beyond the conception of the Japanese.

The most childish and shifty excuses are made for the general neglect of the hill country. The chief forester, with conviction, told me that the hills might not be cleaned; that they would not carry

sheep; that pigs gave off a bad odor; that the Japanese did not need meat; and, as they had plenty of hands to do the field work, there was no need to employ horses or bullocks. Machinery was not liked; it was new, and they were not ready to put it to use. The best of this statement lay in its evident honesty from a Japanese standpoint; but it was not honest, for in no singular particular was it true, excepting, perhaps, that the tidiest and most profitable pig, if neglected, will create a bad odor. But man may never escape the old maxim, "Muck is the mother of money." Farming is incomplete without animals, and it is impossible to preserve a sound countryside in a climate like that of Japan unless animals are regarded as the principal soil restorers and standard sources of wealth.

A low, free-rooting, and persistent bamboo occupies a great area of Japan, and the natives of all ranks and persuasions maintain that this bamboo, which in point of size and vitality is no more than coarse grass, is impossible of eradication, and it is for this reason the whole nation contends that the hills may not be won and held. This contention is absurd, and is the outcome of "don't know" or "don't want to know." The pioneer work of land reclamation during the past 50 years shows plainly enough that where skill and systematic industry are brought to bear there are no areas which are irreclaimable nor any individual or collective vegetation which may not be eradicated, and, of course, land may be cleaned the more readily and economically where there exists a large and inexpensive labor supply.

To write of no more than lies within my own experience in New Zealand, Australia, Tasmania, North America, and Ceylon, I have engaged in the cleaning and stocking of land beset by vastly more persistent and heavier obstacles than those forming the native vegetation of Japan. The dense and almost perpetually wet native forests of New Zealand and Gippsland in the State of Victoria offered more natural obstacles to the square mile than is presented by the worst score of square miles of Japan. But the New Zealand bush and the Gippsland bush have given place to scenes as fair and prosperous as the eyes and heart of a farming man may know, and all within the space of 30 years.

The best imitators in the world, the Japanese have so far proved themselves the least capable of imitating and pursuing the agricultural system of the white race. Many countries have offered bonuses for the destruction of noxious vegetation and the reclamation of wind-swept or saturated and sour land, and if the Government of Japan desires an easy and sure system of procedure it has only to offer a bonus for cleaning and setting in order its now profitless lands. This can involve no loss, as the demonstrators would bear

their own expenses, and, succeeding, the reclaimed land would be worth far more than the bonus it would be necessary to offer. The country marked off into zones—climatic, geological, botanical, and economic—it would be easy to list the conditions and demands of each region and evolve a safe system of procedure.

Japan is inclined to behave like a jealous and cocksure child, who grasps the hand that strives to assist and stops the tongue that would explain. But she does not know of agriculture, and she can not teach agriculture to herself; she needs to be taught, and she will succeed for herself just so far as she is well taught by others. When Japan is discerning enough to invite some of the best field experts and agriculturists from America and the various southern divisions of the British Empire, especially from Australia and New Zealand, she may hope for a prompt and enormous accession to her wealth and an inestimable gain to her people for all time.

Land development is by far the most important subject confronting Japan; for whatever the value and prospects of trade, whatever the value of timber used at home, exported, or regarded as a decorative feature and asset of the landscape, whatever the value of water yielding power, domestic and irrigation supplies, their combined value is as nothing compared to the enormous wealth returnable from depasturing flocks and herds and establishing communities of active workers at higher altitudes—an essential factor to the improvement of the race.

The countries around the Pacific should see the mutual advantage of affording Japan the fullest opportunity to acquire a working experience of agriculture that she may be able to develop and live by her own store. To this end, if sane, Japan will encourage agricultural companies to take up tracts of hill country and demonstrate its usefulness. Granted security of tenure over two or three lives as a minimum, capital and skill to employ it would be forthcoming, and no risk or possibility of loss attach either to the Government or the people of Japan.

Japan may learn all she needs to know of trade and commerce from Europe and America; but she needs also to study the science of land development as it is carried on by those of European descent. Japan has neglected her land. She has idealized the sea and the tree, deified the Holy Carp—making fish, wood, and water her three divinities. This may be a discovery, a shock, a rebuke, or a falsehood even to the Japanese and to some Europeans, but I make these categorical statements in the interests of Japan. She claims the right and the need to progress; whatever that may mean and embody, it should mean the improvement of the general condition of her people. A right to enter and contend and take from every land will

not improve the Japanese. There is no proof anywhere of a nation made out of returned colonists. All true improvement is effected within a nation's boundaries, and until Japan sums herself her sum must be small.

At times it is my employment to estimate the quality and the value of the raw material of various countries. I have examined Japan to appraise it at a high agricultural value. The dormant wealth in the unpeopled parts is far greater than that which existed naturally in any corresponding area of Australia, New Zealand, or Western America. Whatever the present-day value of Japan's land products, I see her capable of producing 20 times as much with the same number of hands and no greater outlay. I see a first extra cost, of course; I see the expense of clearing and preparing the land, and a certain outlay in providing for new industries. By reserving the best natural forest areas of each region, the timber and fuel industries would be assured; the balance should be devoted to agricultural and pastoral industries. Wood worship and the woodcraft engendered of the shrines should not monopolize and make sacred all the hills.

What are the land laws? Who owns and withholds those vast stores of wealth from the hands and stomachs of the people? Has the Government a land policy, and something more than a policy? Has it such sense, such heart, such knowledge as will soon cause it to put its soil to use? Japan will lose by looking abroad; her business is at home. There is plenty of land for those Japanese who would emulate foreign ways of dealing with soil and crops and kine. No land can advance without producing animals on a large scale. Meat, butter, milk, cheese, bacon, lard, wool, leather, manure—can these be done without? And what is Japan without them? She has no efficient substitutes for them.

One cannot deal with Japan in an uncritical spirit and do her any sort of service. Old and new Japan are in such sharp conflict as to reveal a positive disloyalty on the part of the Moderns. Within half a century she has passed from one of the least to one of the most mercenary of nations. Japan is industrious—that is well; but one-tenth of the energy would secure more if given a new and more rational direction. She is wasting her substance abroad, instead of estimating herself and formulating a sound domestic policy. To this hour nothing has been done to alter her land interests or improve the lot of her 50,000,000 peasants. Fear or no fear of outside enemies, Japan's real and lasting business lies at home. Talk about an outlet for her surplus population is a blend of conceit, greed, and paltry ambition. Every country has its share of adventurers who find no profit in legitimate activities. The slavish mimicry in government is none but the worst sign; or if there is a worse, it is

the secret rebellion against the men and things it slaves to imitate. Japanese testiness needs to be overcome; but one may not readily discern its possible destroyer.

Religions are still playing their part in Japan. But whether she respects the animal or not, she must have more meat and she must provide animals for meat and believe in meat, or she won't reduce by the breadth of a hair the natural barrier and difference between East and West. There is no virtue in abstinence, my dear little men. There are more differences made by diet than you are inclined to discern, so pray begin to discern and adopt one more science from the West—the science of feeding. Whatever you may have had to go without in the form of fires and fleshpots, it may be different in the near future. Oil, spirit, and your native waterfalls are giving you heat, light, and power; put these to further use and cook your food. Bring in some decent things; throw out some indecent things. If you must have lawmakers, let them do one diabolical thing—legislate against the people's existing forms of food.

Don't think because you have fought some good fights fairly and squarely that you are anything like as capable as you think you are. You did not invent those ships and arms. I do not like your New Japan; but that is not your fault. If it is a fault at all, it rests on those who came amongst you and persuaded you that vanity was the fine flower of the West and that it paid to fly it mast high. Young Japan, you are already the victim of a commercial conspiracy. In thinking of nothing higher than taking from others, you will lose yourselves. Does it matter? In some ways—yes; in other ways—not at all. He will be a clever man, or a clever fool, who succeeds in improving your land products and its peasantry, for wherever and whenever any change and so-called betterment is made the population may cry out, "We were better off before."

These few words on Japan are no dogmatic effusion. Honestly, carefully, I have tried to set down what I came to believe, where it seemed to me rich, full of meaning, or meaningless. By nature Japan is intended for agricultural pursuits; to have by far the larger part of her population bred out of and kept up among her hills. She is to be new made out of eating meat and clothed with garments of sheep's wool; she is made to share wood fires and cooked food, and, now and then, the merriment and abandon bred of a little wine. So, as I have said elsewhere, Japan is not yet come to full stature. Japan may manufacture and the world may buy, and Japan sell herself to the devil thereby. If she would be strong within herself in the eyes of the world, she must possess and dwell among the hills.

UNITED STATES—JAPANESE RELATIONS.

Source: Reliable.

(11345–R.)

9 September, 1921.

[Lecture being given army reserves who are being called in Kanagawa-ken. Apparently anticipating, or attempting to make the soldiers anticipate, war with America.]

The following lecture being given by the military to the different army reserves who are being called in during this month (August) from Kanagawa-ken:

"Subject 1. In regards to the island of Yap, the United States of America is trying to deprive us of what belongs to us by right of conquest.

"Subject 2. In regards to Shantung. She is also trying to do the same thing in regards to Shantung by inducing the Chinese not to make any settlement with us.

"Subject 3. In regards to Siberia. She wants to know by what right we are remaining and keeping our army in Siberia.

"It is the intention of our Government (Japanese Government) not to give in on any of these questions, so long as all our people will help us. Here is the condition we have to look at: In automobiles for every 24 of population America has one automobile, while Japan, in automobiles, motorcycles, etc., has only one to every 14,600 of population. In regards to ships America has three or four to our one, *but in submarines and aeroplanes we are about equal.* We have at present only about 300 aeroplanes which are in first class condition, but we also have the facilities for manufacturing aeroplanes, submarines, and carriers. We also have the best experts to manufacture these, but what we do not have is sufficient funds in case we should have to go to war with America. Therefore I request all our people to save all they can and place it in the post office savings bank; then if we should have to fight for our rights you will all be in a position to help with what you have, for remember that our country has never lost a war, and if we will all do our part in case it should come to war, we do not have to fear anything."

The men who were called in during this month are men who have been rejected for minor causes, but who have to report every four years for instruction and are only called to the colors in case the country is at war or declares war on another country. The instructions only last half a day.

YAP ISLAND CABLE SITUATION.

Source: Reliable.

(13668.)

9 September, 1921.

The Japanese press of August 30 reported that an agreement had been reached over the Yap question, whereby the United States re-

ceived the Yap-Guam line, Japan the Yap-Shanghai line, and Japan to negotiate with the Netherlands Government over the Yap-Menado line. The United States is also to be permitted to erect radio stations. In commenting on this settlement, the Hochi said:

"This arrangement represents considerable concessions on the part of Japan, which were offered recently in the hope that an arrangement could be reached before the convening of the Pacific Conference. The Japanese Government, apprehensive because of a marked tendency on the part of the State Department to break off the direct American-Japanese negotiations with the idea of submitting the Yap question to the Pacific Conference, recently telegraphed instructions to Baron Shidehara, offering the concessions outlined in the reported settlement."

The comments of most of the other vernacular papers followed the same lines as the Hochi, the antiadministration papers using it to good advantage in attacking the Government.

OFFICE OF NAVAL INTELLIGENCE.
NAVY DEPARTMENT.
Washington, D. C.

MONTHLY INFORMATION BULLETIN.

NUMBER 12—1921.

15 DECEMBER, 1921.

DISTRIBUTION:

In general: Bureaus of the Navy Department; all force commanders; all commanding officers of capital ships, the larger patrols, destroyers, and submarines.

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MONTHLY INFORMATION BULLETIN.

NUMBER 12—1921—15 DECEMBER 1921.

FOR CONVENIENCE IN ROUTING.

Officer.	Initials.	Date received.	Date forwarded.
Captain			
Executive Officer			
First Lieutenant			
Navigating Officer			
Gunnery Officer			
Communication Officer			
Engineer Officer			
Medical Officer			
Supply Officer			
First Division Officer			
Second Division Officer			
Third Division Officer			
Fourth Division Officer			
Fifth Division Officer			
Marine Officer			

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ACTIVITIES OF UNITED STATES NAVAL FORCES OPERATING IN EUROPEAN WATERS.

Source: Official.

Forces in the Adriatic.

On September 29 the U. S. S. *Reuben James* left Spalato for northern European waters. Her withdrawal completed the evacuation of American naval vessels from the Adriatic.

Before leaving the Adriatic the *Reuben James* took Ambassador Childs and the military, naval, and commercial attachés of the embassy on a cruise, including eight Italian ports. After this cruise the *Reuben James* proceeded to Spalato, where she assisted the *Mars* in breaking up the naval supply base at that place.

Two spare propellers were left in Pola by the U. S. S. *McFarland*. I have written to the Bureau of Engineering requesting telegraphic reply as to whether the U. S. S. *Utah* shall take them on board when she visits Pola, about 1 December, and later send them to the United States or whether they shall be sold as recommended by the commanding officer, U. S. S. *Reuben James*, recently senior officer present in the Adriatic. Tug No. 60 was turned over to Capt. Stankovic, who represented the Jugo-Slav Navy, to his apparent satisfaction, and without formality other than a parading of the crew of the *Reuben James*.

The Italians are undoubtedly glad to see our forces entirely withdrawn from the Adriatic, whereas the Jugo-Slavs are not. The Jugo-Slav Government does not feel safe and will not have any confidence in Italy's sincerity as long as the third zone of occupied Dalmatia continues to be held by Italian troops. According to the treaty of Rapello, the third zone of occupied Dalmatia should have been evacuated by the Italians during the latter part of May.

United States naval detachment in Turkish waters.

(Rear Admiral Mark L. Bristol, U. S. Navy.) The U. S. S. *St. Louis* was recently ordered home by the department. I directed her to proceed to Naples where she arrived October 8 and sailed October 15 for Gibraltar. The *Utah* expects to arrive at Gibraltar about October 24, and will exchange certain personnel with the *St. Louis*.

After Commander C. S. Joyce, U. S. Navy, had relieved Commander V. S. Houston, U. S. Navy, as commanding officer of the *Brooks*, the *Brooks* and the *Gilmer* left Gibraltar on October 6 for the United States.

The following paragraphs of letters from Rear Admiral Bristol are quoted:

"The U. S. S. *Overton* arrived from a visit to the Syrian coast and Palestine on September 3. The commanding officer's report indicates that the situation generally in the south is quiet and orderly and American interests are being well cared for. The *Overton* was cordially received in all of the ports visited. The impression was gained that the French are not meeting with any degree of success in reconciling the natives to their control in Syria.

"The Greco-Turkish battle along the Sakaria River continues, and reliable reports indicate that both sides have suffered severe losses. It now appears that the Turks have been successful in stopping the Greek advance and it is quite possible that the Greeks may have to withdraw to the Eski-Chehir line.

"Maintained destroyer at Samsoun for the protection of American interests. A destroyer was dispatched to Novorossisk, Russia, having on board two representatives of the American Relief Administration, a member of the detachment commander's staff, and a representative of the United States Shipping Board. These passengers were sent to Novorossisk for the sole purpose of ascertaining the facilities for landing and distributing American relief supplies, and this trip of a destroyer was made upon the request of the American Relief Administration.

"Large quantities of ammunition, rifles, and field guns are still being landed at Samsoun for the Turkish Nationalists. Most of these appear to be coming from Russia, but recently war material, including field guns, have been landed from a French ship and an Italian ship, sailing from Constantinople. Recently a large amount of Russian was landed at Samsoun.

"In Constantinople the commander in chief of the Allied Armies of Occupation announced that a plot had been discovered to begin a revolution in Constantinople, to be accompanied by the assassination of persons in high positions, destruction of property, etc. The ring leaders are supposed to be Turks and the Allied authorities have made a demand on the Turkish Government in Constantinople for the arrest and delivery of the leaders of this plot in accordance with the names supplied to the Turkish Government by the Allied authorities. On September 10 the British fleet in the Levant, consisting of about 15 ships, made a demonstration by steaming in formation up the Bosporus and then down again. Small bodies of troops have marched and countermarched about the city, but no actual disorder has occurred.

"The American Red Cross at Constantinople has received orders to shut down all of their activities by October 1. The result of this will doubtless be serious, as the American Red Cross has been doing

a large amount of relief work, including the feeding of between 17 and 18 thousand Russian refugees in Constantinople. The sudden withdrawal of this relief may have not only serious results so far as humanity is concerned but may precipitate riots that may have serious political consequences. This has been strongly represented to the American Red Cross authorities in America and has been brought to the notice of the representatives of all foreign Governments in Constantinople."

Items of general information.

In accordance with orders from the department I proceeded from the U. S. S. *Utah* at Cherbourg, France, to Paris, on September 29 and on the morning of September 30 reported to the American ambassador, Paris, as representative of the department of the Navy in the bestowal of the congressional medal of honor on the unknown French soldier, the ceremony to be held on Sunday, October 2. The naval attaché in Paris gave a luncheon in my honor on September 30 at the Inter-Allied Club, to meet the American ambassador and various French naval officers. In the afternoon, by appointment, I called upon the French minister of marine and various other officials of the French Navy. On Saturday, October 1, the French minister of marine gave a luncheon in my honor at the Inter-Allied Club to which various French naval officers were invited, including the chief of staff and the prefet maritime of Bizerta. In the afternoon of October 1 I called upon Gen. John J. Pershing, who had arrived that forenoon from Coblenz as the guest of the French Government.

On the morning of Sunday, October 2, accompanied by Capt. F. B. Upham, United States Navy, naval attaché, I reported to the ambassador at 8.30 a. m., and at 9 a. m. the procession of automobiles left the residence of the American ambassador to parade along a certain route, the leading automobile having as passengers Ambassador Herrick, Gen. Pershing, and myself. The other automobiles that followed contained the secretaries and the naval and military attachés. The ceremony, which took place in the open air at the Arc de Triomphe, was most impressive, but it was noted that the Navy was not regarded as having very much interest in the matter as no high ranking French naval officers were present. Following the ceremony of the bestowal of the medal of honor, the President of France, the French Cabinet, Ambassador Herrick, Gen. Pershing, myself, and certain marshals of France, witnessed a review of about 12,000 troops. The ceremony ended at 10.30 a. m.

On Tuesday, October 4, the President of France gave a luncheon in honor of Gen. Pershing at the Elysee Palace, to which I was invited, and at which luncheon I sat on the left of the President of France and next to the minister of finance. The following day Ambassador

Herrick gave a luncheon, and this ended the official affairs in connection with the ceremonies. Unfortunately no reply had been received from the British Government as to the date the ceremony was to take place in London. It was my intention to proceed by train to London as soon as the date was announced. On Saturday, October 8, the American troops from Coblenz were returned to their post in order to vacate the barracks much needed by the French Government. On Monday, October 10, Gen. Pershing gave a large luncheon to various high French officials, and to which Ambassador Herrick and myself and the naval and military attachés were also invited. At the luncheon I was definitely informed that the British Government had decided not to hold the ceremony in London until probably Armistice Day. Accordingly, on October 11, I returned to the U. S. S. *Utah* at Cherbourg. On the morning of October 12, I learned that the British had decided rather hastily to have the ceremony before the sailing of Gen. Pershing, which had been originally fixed for October 15. Accordingly, I crossed the channel in the U. S. S. *Reuben James* to the British dockyard at Portsmouth and proceeded to London and reported to the ambassador, who officially announced that the ceremony would take place on Monday, October 17, at 11.30 a. m.

I explained to the ambassador that in England the distinction "Unknown Warrior" had been given in order to include the Navy and Marine Corps and that a large British naval contingent would probably take part in the ceremony and therefore expressed the hope that I would be given the recognition as representing the U. S. Navy and Marine Corps. I met Admiral Beatty at luncheon on Friday, October 14, just prior to his sailing for America, and he expressed the earnest hope that there would be enlisted men present from the U. S. S. *Olympia*, then at Plymouth, as he said he feared that the Navy would not get proper recognition in the ceremony. I accordingly, with the approval of our ambassador, requested the commanding officer of the *Olympia* to send a detachment of 50 men under arms and 3 officers to London on Sunday, October 16, to take part in the ceremony. On Saturday morning, October 15, when I informed the British Admiralty that I had ordered the men to London, I was immediately told that they would be their guests from the moment they left the ship until they returned, and furthermore, the admiralty requested that 12 additional officers be invited to be the guests of the British Admiralty until Wednesday morning, October 19.

On October 14 I was put in communication over the long-distance telephone with Gen. Pershing, to arrange certain details, and he urgently requested me to assist him in returning to Paris immediately after the ceremonies were over on October 17, which was the

date set for the ceremony. Gen. Pershing arrived in London at 7:00 p. m., Sunday, October 16, as the guest of Ambassador Harvey, who gave a dinner at 8:15 in honor of Gen. Pershing, to which myself and the naval attaché were invited and at which were present the minister of war, First Lord of the Admiralty, Earl Haig, and other distinguished guests and their wives.

On Monday, October 17, at 11 a. m., I reported to the ambassador with Rear Admiral N. C. Twining, U. S. Navy, naval attaché, and my aid and was told that I would not ride in the carriage with the ambassador and Gen. Pershing, but as a concession I would be permitted to hold the medal of honor and hand it to Gen. Pershing at the time of the ceremony, thus publicly participating in it. The formal procession through the streets of London was witnessed by an unusually large and demonstrative crowd. The British and American troops and the American bluejackets were drawn up outside Westminster Abbey, and a detachment of soldiers and bluejackets from both armies and navies lined the route of the procession in Westminster Abbey itself. The ceremony was deeply impressive and was held at the psychological moment when the British Cabinet was concentrating its ideas on naming the delegates to the American Disarmament Conference in Washington, and Mr. Lloyd George had just announced his intention to go to Washington. After the ceremony the Duke of Connaught, representing the King, gave a luncheon at Clarence House in honor of Gen. Pershing, to which were invited also the American ambassador, myself, and the naval and military attachés and a distinguished gathering of leading British statesmen, including the Prime Minister, members of the cabinet, and distinguished naval and military officers. In the afternoon, at 5 p. m., Brigadier General and Mrs. Cornelius Vanderbilt gave a tea in honor of Gen. Pershing, which was attended by many important people. In the evening at 8 p. m. the minister of war gave a dinner in honor of Gen. Pershing in the name of the British Government, to which were invited the ambassador, myself, naval attaché, and aides.

There were many favorable comments upon the fact that as a naval officer I participated in the ceremony with Gen. Pershing, because the tendency is to regard the unknown soldier as not representing the Navy and Marine Corps. I labor this point because in the ceremony at Arlington some steps should be taken by the Navy Department to secure adequate recognition of the Navy and Marine Corps in the ceremonies, as it is barely possible that the unknown American soldier may be a marine. Unquestionably the bestowal of this medal of honor has had a very stirring effect in England and there has been a general hustle to remove the painful impression which was at first caused by the muddle in not naming the date for the ceremony.

Gen. Pershing had a most pressing date in Paris Tuesday noon. October 18, so after the dinner at the Hotel Carlton, about 11.30 p. m., he and his aide left London by motor to Portsmouth Dockyard; boarded the U. S. S. *Sands* at 1.20 a. m., and sailed for Havre at 1.30 a. m. He arrived at Havre at 7.30 a. m., and was met by a number of officials at 8 a. m. and left immediately for Paris, where he arrived in time to keep his engagement with Marshal Foch, who is leaving for America. Gen. Pershing is himself sailing from Cherbourg on October 20. He was in London altogether about 30 hours and was most appreciative of the use of the U. S. S. *Sands*, which had to go to Havre anyway to get some of her machinery which had been sent in care of the American consul there, as the *Sands* is sailing to-morrow for the Mediterranean.

While in London I took Commander R. F. Zogbaum, U. S. Navy, commanding officer of the U. S. S. *Reuben James*, to the headquarters of the American Relief Association, where we had a long talk with Mr. Walter Brown and other representatives. It appears that there has been absolutely no trouble with the Soviet Government which has cooperated most efficiently and honestly with the American Relief. Fourteen train loads of food have been sent into the heart of Russia without the loss of a single pound of food, and it is being distributed to the children without any attempt made to divert it to other channels.

I was assured by Mr. Lloyd George and by a representative of the British Foreign Office that they had had a similar experience in dealing with the Soviet Government in sending food to the starving children of Russia. In other words, the Soviet Government handles all the stores, puts them on board the trains, and delivers them at the Relief Headquarters in various cities in the interior of Russia without necessitating the presence of any American representatives on board the trains. Moreover they pay all the expenses of handling and transportation.

On Saturday, October 15, Commander Zogbaum took advantage of Commander A. S. Hickey, U. S. Navy, being in London to a conference and went over the question of communications with the Relief Association so that there is a complete understanding of just what the *Reuben James* might have to do in case of a breakdown in communications. It does not look as if there would be any political complications on account of the food relief, or on account of the *Reuben James* being in the Baltic at Riga or Libau.

NOTES ON ADVISERS TO CHINESE DELEGATES.

Source: Reliable.

Vice Admiral Tsai Ting-kan.

Vice Admiral Tsai Ting-kan was born in Kwangtung province in 1857, and was educated at Hartford, Conn., where he attended school for eight years. He speaks excellent English and is very pro-American.

Upon his return to China in 1881 he entered the Chinese Navy and during the Chinese-Japanese war had command of a division of torpedo boats. He is not supposed to have covered himself with much credit during the Chinese-Japanese War and at the end of the same resigned from the navy.

In 1911 he joined the services of Yuan Shih-kai, who at that time was viceroy of the Province of Chihli. Upon China becoming a republic in 1912, Tsai was made naval aide to Yuan Shih-kai and master of ceremonies. He has successfully served as naval aide and master of ceremonies to every President of China and in addition to-day holds a position of vice director of the inspectorate of customs.

Tsai was in close touch with Yuan Shih-kai at the time the Japanese Government presented their famous 21 demands and should be in a position if desired to give all inside information concerning this controversy.

Tsai is not considered a powerful man by the Chinese and foreigners, but has a pleasant personality and excellent education. He is a confirmed Taoist and a well-known student of the Chinese classics.

Dr. John C. Ferguson.

Ferguson is an ex-missionary and is considered by educated Chinese to be one of the best foreign Chinese scholars living in China. By the Chinese Ferguson is held in high esteem; unfortunately for Ferguson this is *not* the opinion of the foreign community.

Ferguson for many years has been attempting to obtain the position of Chinese secretary to the American Legation, and only a little while ago he did his utmost to get the appointment of American minister to China as successor to Mr. Charles R. Crane. When Ferguson's ministerial ambitions became known, American chambers of commerce in China and influential private citizens cabled to Washington in the hopes of precluding the possibility of his appointment, in which they were successful. As an example of Ferguson's willingness to help the American Legation by furnishing it with the news of inside information which his position as advisor is bound to give him, it is of interest to note that seldom if ever has Ferguson been of any help to the legation.

Ferguson knows China and the Chinese, but he is certainly not the type of man to be trusted.

The above statements are based on the opinion of the American community at large in China.

Rear Admiral Lee Ching-hsi.

Rear Admiral Lee Ching-hsi was born in Fukien in 1878 and obtained his naval education in the Foochow Naval College and later in England. He speaks fairly good English and has made quite a study of naval ordnance and ballistics. He represented the Chinese navy as inspector during the time the Armstrong Works were building ships for the Chinese navy. For the past years Lee has been the head of the educational department of the Chinese Navy.

Lee has a charming personality, is well educated, and reputed to be honest, but lacks force and is barely known among either Chinese or foreigners living in China.

FORTIFICATION OF BONIN ISLANDS.

Source: Reliable.

A channel has been dredged from about 300 yards southwest of Futami Iwa, through the narrow neck of land (¼ mile in width) into Anijima Seto.

Informant was told channel is deep enough for capital ships, but was not allowed to take his schooner near the cut (which is reserved for naval vessels) and was therefore unable to verify the depth.

This office believes that there is probably not more than enough water to float a light cruiser.

The shoals in the harbor (Port Lloyd) and the flats on the northwest shore have been dredged and the indentation to the eastward of a line drawn from latitude 27° 04′ 54″ north, longitude 142° 12′ 03″ east, to latitude 27° 04′ 18″ north, longitude 142° 11′ 52″ east, passing through Kaname Iwa, has been filled in for use as an aviation field.

All dredging and filling-in done by naval personnel and occupied something over a year, and naval auxiliary vessels have now left the island.

The above harbor work has increased the anchorage ground to accommodate eight capital ships.

Emplacements for fortifications have been located at Yoake-yama and at Mikayeri-yama. All the emplacement work has been done by coolies brought from Osaka, directed by Japanese Army Engineer officers.

These are the only two places where fortification work has so far been done.

No guns or mounts have yet been received on either island.

It is stated that the guns are to be large caliber (probably 16-inch) and that it will require two years to complete the fortifications.

A wide military road has been built from the Port Lloyd harbor to the fortifications.

This road work was done by the islanders and is the only work on which they were employed.

BRITISH POLICY REGARDING DEFENSES AT HONGKONG.

Source: Reliable.

20 September, 1921.

An official states that the purpose of the British submarines at Hongkong is a most important link in the defense, and that their presence would enable the defenses to hold out for at least six weeks against an enemy; that by that time they would expect the arrival of their battle cruisers on the station.

He believes that the defenses at Hongkong are, from a strategic point of view, intended only for the defense of the naval base, and that the naval base, in turn, is intended to support naval forces that could be used aggressively against any enemy in the Far East.

It would seem that the above principles are of special interest in a similar application to the Philippine Islands.

JAPANESE-BRITISH RELATIONS. (LEAGUE OF NATIONS UNION.)

Source: Reliable.

(7502–B).

The Anglo-Japanese alliance was first concluded in 1902 prior to the Russo-Japanese war and had special significance as the first treaty of the kind between a European and Asiatic power. Under the treaty either party was to remain neutral in the event of the other undertaking a defensive war against a third power but was pledged to assistance in the case of another power joining in the conflict.

It may therefore be argued that Great Britain ran the very great risk of being drawn into war at the time of the Russo-Japanese War, for had France or any other power supported Russia, we should inevitably have had to take part in what might easily have developed into a world conflagration. On the other hand it may be argued that the Alliance prevented France from giving assistance to Russia and left the issue to the two colligerents.

Count Hayaski in his secret memoirs declares that the Japanese victory would never have taken place without the Anglo-Japanese alliance.

The professedly main object of the treaty of 1902 seems however to have been lost sight of; this was the maintenance of "the independence and territorial integrity of the Empire of China and the Empire of Corea."

The renewal of the treaty of 1905 towards the close of the Russo-Japanese war may be said to have strengthened Japan in a policy which subsequent events tended to show was the overthrow of the Korean Empire, the annexation of that country, and the envelopment of China. The immediate result was the consolidation of her position in southern Manchuria and the declaration of a "protectorate" over Korea.

A further revision of the agreement was signed at London on July 13, 1911, a year after the annexation of Korea. The objects of the agreement being stated as—

(*a*) The consolidation and maintenance of the general peace in the regions of eastern Asia and of India.

(*b*) The preservation of the common interests of all powers in China by insuring the independence and integrity of the Chinese Empire and the principle of equal opportunities for the commerce and industry of all nations in China.

(*c*) The maintenance of the territorial rights of the high contracting parties in the regions of eastern Asia and of India, and the defense of their special interests in those regions.

Under this agreement either party is obliged to come to the assistance of the other if the latter, by reason of unprovoked attack or aggression, is involved in war in defense of its territorial rights or special interests, to conduct war in common and to make peace in mutual agreement, the only exception to this obligation being in cases where a treaty of general arbitration has been conducted between the party whose assistance is called upon and the power with whom the other is at war.

There appears to be still some doubt as to whether in the event of a war between Japan and the United States of America, Great Britain would be absolved of its obligations to take sides with Japan.

This agreement remains in force until the 12th of July, 1921, and thereafter until 12 months after it has been denounced by either party. If, however, at the date when it should expire either ally is actually engaged in war it shall *ipso facto* continue in force till peace shall have been concluded.

During the earlier months of the great war Japanese policy in China showed a marked tendency towards aggression, and this culminated in the famous 21 demands of January 18, 1915. It is impossible

to reconcile these demands with the text of the spirit of the treaty under discussion. China's acceptance of them would have reduced her practically to the status of a protectorate. It is a matter of common knowledge moreover that since that time the Japanese have carried on a policy of concluding secret financial agreements with individual unscrupulous Chinese officials with a view to acquiring privileges which she was unable to obtain at the time of the 21 demands.

Impossible as it is to justify many of Japan's actions toward China it must be remembered that it is just as impossible to excuse some of the actions in that country of any of the great powers. The mineral wealth and the markets of China are an absolute necessity. She is hampered in the prosecution of legitimate commerce by the incompetence and stupidity of a central government which can not govern; she can not get perfectly honest transactions carried through in a reasonable way. It is little wonder that in exasperation she has blundered into methods which do her little credit and that her agents, in view of the impossibility of getting any satisfaction at Peking, have dealt in the provinces in questionable ways with any official they could bribe or cajole. Japan's actions are to be explained as arising much more out of economic necessity than out of political ambition.

The treaty means much to her apart from any wording of its text, which may or may not be utterly sincere. Japan values Britain's friendship and desires to work along with this country. She sees herself unlikely to find another friend in the world. And it may well be argued that much as the letter and spirit of any treaty she may make may be abused, things might conceivably be much worse without some restraining influence.

The denunciation of the treaty at this moment could not but be looked upon as an act of unfriendliness and of ingratitude for the services given up in the war.

On the other hand the situation has been entirely changed by the establishment of the League of Nations of which China is a member as well as Japan. This change is further accentuated by the elevation of China within the last few weeks to the dignity of a member on equal terms with Japan of the Council of the League. It is almost impertinent for two members of the council to conclude or even carry on arrangements which, without her consent, involve a third member. The territorial integrity and independence of China are fully guaranteed under the Covenant of the League of Nations, of which Japan and Great Britain are signatories, and this guarantee holds good against any aggressive action upon the part of Great Britain or Japan.

Both countries have agreed to abrogate all treaties which are inconsistent with the Covenant of the League, and in view of this, they have submitted the treaty to the League for examination. Should the League decide that the terms of the treaty are inconsistent with the covenent it is presumed that both countries will agree to denounce it.

It is not known whether the council has decided on this matter, but if it has not it is inconceivable that China will ever agree that the treaty is consistent with the covenant, and even in a minority of one of the council she can prevent any decision to that effect.

In view of the complete alteration of the situation, of the great objection to this treaty on the part of the Dominions and of the United States of America, and of the new status of China, it would be to the interest of both powers to take an opportunity of bringing the agreement to an end in an open and friendly way and making special reference to the new situation created by the establishment of the League.

CHARACTERISTICS OF FRENCH DELEGATES TO THE CONFERENCE.

Source: Reliable.

Gen. Buat is at present the chief of the general staff of the army. I have known him for 21 years and have followed his career during all of that time. His rise to his present position has been a steady and merited progress, due to intellectual ability and high character, from the time he was a lieutenant and the favorite pupil of the famous strategist, Gen. Bonnal.

Gen. Buat has long been one of the favorite collaborators of M. Millerand. He has been twice in his cabinet when the latter was minister of war. In 1914–15 he was chief of cabinet, although at that time only a lieutenant colonel. Gen. Buat was unhappy at this situation, which kept him away from the campaign, but he yielded to M. Millerand's natural desire to have an officer of known brilliant attainments and whom he knew and liked at his side.

When M. Millerand left office Col. Buat went to the front, where his ability caused his rapid promotion, and in June, 1918, he was made chief of staff of the general commanding in chief of the French armies, Gen. Petain. Upon the demobilization of the French army and the reorganization of the war department, Gen. Buat was made chief of the general staff, which post he still holds.

Gen. Buat was an officer of artillery and a member of the general staff. He has written a number of much appreciated studies on technical matters concerning artillery, and he translated and furnished

to the French public Ludendorff's and Hindenburg's books. These works were more than mere translations, being largely an appreciation of the men and their work.

Gen. Buat is in no sense a political soldier, but his frequent service at the war department in intimate association with M. Millerand when minister of war and his present situation have given him a closer knowledge and wider comprehension than most generals would have concerning the political aspect of military measures and the political necessities governing military decisions.

He has a well-balanced mind, well-furnished by reading and study; a really most accurate mechanism, as much uncolored by prejudices as it is possible for a patriotic and ardent man to be; he is a rare combination of the student and man of action. He has strength and independence of character, but he is at all times a perfectly disciplined soldier, untainted by the peculiarities of the German general staff, which sought to be the masters rather than the servants of their country.

Vice Admiral de Bon.

Mr. de Bon (Ferdinand-Jean-Jacques), born at St. Sevran (Ille et Villaine), the 3d July, 1861, entered the Naval School in 1877.

On October 5, 1882, he started on a campaign in the Far East on the *Chasseur*. Promoted lieutenant de vaisseau on 11 January, 1887, he went through diverse specialty schools, received the command of a torpedo boat, was aide-de-camp to several officers of command rank, then was placed in command of the *Salve*. The 1 November, 1899, he was appointed lieutenant commander and placed in command of the *d'Assas*, then of the *Du Chayla* in Morocco. The 16 May, 1907, he was promoted captain and was flag captain to Rear Admiral Chocheprat, then he was in command of the *Condorcet*. Chevalier de la Légion d'Honneur the 30 December, 1891, he was promoted officer of the Légion d'Honneur the 28 December, 1909. Sous-chef of the general staff, the 28 May, 1913, he was promoted Rear Admiral the 28 November of the same year and became major general at Brest the 16 November, 1914. The 16 August, 1915, he commanded the naval division of the bases of the expeditionary corps for the east. He was appointed commandeur de la Légion d'Honneur the 8 January, 1916, as a reward for eminent services rendered during the evacuation of The Dardanelles, in organizing the Saloniki base, and in the transportation of the Servian Army from Corfu to Saloniki.

Promoted vice admiral the 29 February, 1916, and nominated the 10 March of the same year chief of the naval general staff, he exerted these high functions up to July, 1919, at which date he took

command of the naval army, and remained at Constantinople for several long periods of time, until the end of his command, July, 1921. He was promoted, the 24 January, 1919, to the dignity of Grand Officier de la Légion d'Honneur.

"Slender and nervous," said, talking of Admiral De Bon, Commanler Emile Vedel. "Anybody accosting him receives immediately the impression of being in the presence of a 'character.' Frankness and resolution can in fact be read at a first glance in his steel blue eyes, the clear looks of which illuminate one of the most comely physiognomies. He is a skilled technician and possesses likewise a great capacity for organization; also uniting broad general views to the faculty of remembering every detail.

"When in charge of the high functions of chief of the general staff, his resolute mind, the clearness and broadness of his views have had fruitful results, as well in the preparation of the plans of naval operations, which are so complicate, as in the parleyings of the armistice and the peace treaty."

Mr. Aristide Briand.

Born at Nantes (Loire-Inférieure) the 28 May, 1862; like Mr. Lloyd George, he is of Celtic origin. He sprang from the people and has been his own architect in the structure of his political fortunes. He is a man of imagination and has shown that he is cognizant of the temper of his own countrymen. He has accurately gauged the temper of the French Parliament.

Mr. Briand is a man to whom the force of circumstances appeals; he appreciates the reality of things, has a remarkable power for the assimilation of facts, and is a very sympathetic orator.

The present ministry is the seventh which Mr. Briand has formed; this constitutes a record. The world has had to recast its previous estimates of his character and ability. "By his conduct of affairs, his tenacity of purpose, his manifestation of will power he has falsified the prophecies of political students outside of France and disillusioned many of his countrymen. Critical foreigners and Frenchmen alike have had to revise their judgment of Aristide Briand." Information from the other side of the Channel is to the effect that British Cabinet ministers have been astonished by his firmness and the courage of his convictions.

Mr. Briand showed that he possessed a surer knowledge of the workings of the German mind than the British Premier. He appreciated that even the threat of the Supreme Council would have no effect on the German autocrats and leaders; that the only action which appeals to them is, not a pretense, but a real show of force. Thus in connection with the Ruhr Valley, no one will deny that it was the calling up of the nineteenth class that forced the Germans to make up their minds and bend to the inevitable.

The result of the London conference was a cruel deception. Mr. Briand had to face an unpleasant situation in the French Chamber. A weaker, less adept man than he would have irretrievably sunk. Mr. Briand emerged from the ordeal a stronger man than ever. His victory as Premier was even greater before the Senate.

PERSONAL ACTIVITIES AND POLITICAL SITUATIONS. HAVANA, CUBA.

1. (*a*) On 1 October the squadron commander was in the *Niagara* at Key West, Fla., where ship was coaled and opportunity given to clean and paint ship. During this time the squadron commander inspected the U. S. S. *Galveston*, which arrived from Balboa and joined the flag. On 6 October the *Niagara* arrived Havana, Cuba.

Prior to our proceeding, dispatches were sent to the American minister and the consul general informing them of my prospective arrival and requesting that the Cuban officials be notified that I was proceeding there on a visit of courtesy. As the American minister was absent from Havana the legation was in charge of the secretary, Mr. Cable. The consul general was also absent, and the consulate was in charge of Consul John R. Putnam. Gen. Crowder, the personal representative of the President of the United States, was in Havana and was installed in quarters and offices at our legation. I was informed that although no public announcement had been made, Gen. Crowder was officially at the head of our legation at this time. In making my official call at the legation the chargé ushered me immediately into Gen. Crowder's office, and it was evident he was in full charge of the legation. The chargé returned my call. Gen. Crowder explained that he was extremely busy with bankers' commissions and with unexpected conferences with the President, and promised to call on me as soon as possible. It was finally arranged that he was to call on the last day of my stay, but just prior to the hour set he sent word off that he had been summoned to a conference with the President, and would be unable to come. As our relations had been extremely pleasant during my visit, I informed him that I understood the situation, and that I regretted his inability to call. Calls were exchanged with our consul, officers of the Cuban Navy, and port officials.

At my request arrangements were made by the chargé for me to call upon the President of Cuba. The first date set for this call was 10 October, but as this was a Cuban national holiday the arrangements were cancelled and the visit postponed until the next day. Accompanied by our chargé and my staff I arrived at the palace at the hour appointed. I noted that no preparations were made at the door to receive us and we had to inquire as to the whereabouts of

the president. We were finally directed to an anteroom where we waited while the chargé inquired as to where the president could be found. He received word through an aide that the president was very busy in his office, but would see us soon. A few minutes later this aide reappeared and conducted us into an office where we found the president alone and seated at his desk. He extended a friendly greeting and we exchanged the usual expressions of good will and pleasure at the meeting. After a few minutes conversation on general topics we retired. Before leaving I informed the president that my stay in port would be very brief and realizing how very busy he was at this time I expressed the hope that he would honor me by a visit to my flagship on my next return to the port. He expressed pleasure at the invitation and promised that he would accept it if possible. The whole visit was ultra informal. This was the fourth presidential call I had made during my services in these waters and I could not help contrasting it with the other audiences which had been very ceremonious and formal. However, I do not believe any slight was intended.

10 October was the anniversary of the breaking out in 1868 of the ten years war for Cuban independence and this date had been declared a national holiday. An impressive parade was arranged for that day, but we were not invited to take part. I was informed unofficially that the Cuban Government desired to make this purely a Cuban function. At the request of the senior Cuban naval officer we dressed ship in company with the Cuban vessels in the port. No anniversary salute was fired. We had exchanged salutes with the port upon arrival.

Both official and civilian circles were greatly wrought up over the financial situation existing in the island at this time. Gen. Crowder's mission; the presence of several commissions of United States bankers who were there in connection with prospective loans; and what the outcome of the whole affair would be; was the universal subject of conversation. Both Cuban and American civilians seemed to hold the United States in some way responsible for their present financial difficulties. Although everybody talked poverty, money seemed to be spent in plenty around the city, places of amusements, shops, automobiles, etc. Prices were still very high and little reduction seemed to have been made in either necessities or luxuries. There was talk of many of the shops on the main business street being in trouble and liable to fail, yet from prices of goods shown in the window, it did not seem that they were making any effort to dispose of their stock at reasonable prices. As an example, I noted an ordinary pair of low buckskin men's shoes being marked at $16, the same kind of shoe I can now buy in the States for about $7.

The *Niagara* sailed on 13 October.

Haiti.

(*b*) Arrival at Port au Prince, Haiti, Sunday, 16 October, exchanged salutes with the port the following morning at 8 o'clock. Col. J. H. Russell, commanding the Marine Force of Occupation, and Gen. Douglas McDougall (lieutenant colonel marines), commanding the Haitian gendarmie, called promptly. These calls were returned the next morning. Calls were exchanged with the American chargé, Mr. Jordan (the American minister being absent), and with the American vice consul. Through our chargé it was arranged that I should pay my respects to the President on Tuesday, 18 October. At the hour appointed I arrived at the palace with the chargé and my staff. A battalion of gendarmie was drawn up in front of the palace. Regulation honors were rendered and a salute of 13 guns were fired. The President, surrounded by his Cabinet, received us standing in a big audience hall, and gave me a friendly and ceremonious welcome. I informed the President that my visit had no diplomatic significance, and was purely one of courtesy such as I had been making to the various Latin American countries on this cruise. He expressed pleasure at my arrival and was especially cordial when he realized that this visit was such as I had stated it to be, and that I was on no secret mission. The newspapers, however, were loath to accept this statement and gave wild guesses as to what was the real cause of my presence at Port au Prince. After this audience, at the request of the commanding general, I inspected the gendarmie battalion, and in company with him made a tour of the prison, barracks, and service schools. I was greatly impressed with the discipline of the black soldiers and their observance of military etiquette; and the scrupulous cleanliness of the prison and barracks. I have never seen cleaner or more sanitarily kept habitations.

Having last been in Port au Prince some nine years ago, I could hardly realize this was the same city, with its present well-paved streets, general air of cleanliness, excellent sanitation, and handsome buildings.

During my call I invited the President to visit my flagship officially, and he accepted. Arrangements were made for him to call the same afternoon. I invited the colonel commanding the marines and the commanding general of the gendarmie and the American chargé to assist me in receiving the presidential party. The President arrived accompanied by his full cabinet and was given all the regulation honors and salutes. Refreshments were served in the cabin and so exchanged mutual expressions of friendship and hopes for closer relations and cooperation between our Governments. The President appeared to be very much pleased with the reception and honors I had given him and made repeated complimentary pro-

American remarks. I gathered that having the American representatives of the other services on board to assist me at this reception was a very good move and plainly indicated that close harmony and cooperation existed between us and that I was not on any mission in the least antagonistic to the other American officials ashore.

The next night an official dinner in my honor was given by the minister of foreign affairs at his residence. When I accepted this invitation, which was first given verbally during my call on the President, I was assured that the President himself would be at the dinner, but he was not and excuses were made for him. I was told that he never dined out of the palace for fear of poison or other method of assassination. There were 40 guests at this dinner, which included all the high American and Haitian officials and the ladies of their families. The President's band played the "Star Spangled Banner" on my arrival and departure. The dinner was excellent, well served, and all the table appointments in good taste.

The minister made a most complimentary speech of welcome, etc., to me and toasted President Harding. I replied suitably and toasted the President of Haiti.

Like all the other countries that I have visited in these waters Haiti is suffering from a severe financial depression which has brought about an almost complete stagnation in foreign trade, hence materially reducing the customhouse receipts. All the officials realized that with the withdrawal of the marines the country would soon lapse into a state of anarchy again, but of course they resent not being able to dip into the treasury as they always have done in the past, and both the "ins" and "outs" would like more freedom in the expenditure of their revenues. Both Colonel Russell and General McDougall seemed popular with the President and his party. The greatest matter of interest to everybody in the city seemed to be the expected visit of the congressional committee of investigation, which visit seemed to have been postponed indefinitely. The populace were certain when we first arrived in port that we were bringing this committee. The attitude of the people on the streets in the city and in the country appeared quite friendly. The marine officers assured me that this visit had been a most excellent thing, since it was purely one of courtesy and had nothing to do with Haitian politics or any investigation.

The *Niagara* sailed on 20 October.

Santiago de Cuba.

(*c*) Arrived Santiago de Cuba the afternoon of 21 October. No salute was fired as there was no saluting battery to return our salute. Information had previously been sent of our prospective visit. The American consul came on board at once and brought an invitation for

a reception and dance to be given by the American colony on Saturday night; and to a formal reception by the Cubans at the San Carlos Club on Sunday night, in my honor.

Next day in company with the American consul I called with my staff on the governor of the Province of Oriente, Col. Alfredo Lora, and on the acting alcalde of Santiago, Senor Bartolome Rodriquez. They were both extremely cordial and expressed the greatest pleasure at my visit. They returned the visit in a few hours. At their invitation and in company with them, I and all the officers who could be spared from duty, went on a long automobile ride, and visited the battlefields of San Juan Hill, El Caney, etc. These two officials did everything in their power to show their good will toward Americans and made every effort to entertain us. The reception at the San Carlos Club was a bit of a frost so far as numbers were concerned. I expected a very large gathering of Cubans as the club has an extensive membership. Besides the governor, the alcalde, the archbishop of the diocese, there were many minor officials and officers of the Cuban Army and Navy, but scarcely 50 civilians were present. It was my impression that others absented themselves through anti-American feeling, which is very strong in Cuba now due to the fact that the Cubans seem to hold the United States responsible for the depression in the sugar market. In reply to a speech of welcome by one of the committee I made a short speech and toasted the President of Cuba.

The *Niagara* sailed 24 October for Guantanamo where the ship was coaled and I inspected the U. S. S. *Cleveland* which had been ordered to meet me there prior to her departure for New York for leave and liberty. The commandant of the station, Commander Menner, extended us every courtesy and I was impressed with the neatness of the yard and the general efficiency of the administration of it. On 27 October sailed from Guantanamo for Balboa, C. Z.

(*d*) The department having informed me that it was desired to reestablish the east coast of Mexico patrol the *Galveston* was ordered north for this duty and she joined the *Niagara* at Key West. She was ordered to proceed to New Orleans via Tampa, Pensacola, and Mobile, staying a few days at each port. The *Tacoma* having completed her overhaul was ordered to relieve the *Galveston* at New Orleans and to assume this duty; the *Galveston* being ordered to the Zone via Havana for 5 days leave and liberty.

(*e*) The time having approached for the *Cleveland* to go north for her scheduled leave and liberty, she was ordered from the Zone to Guantanamo, stopping en route to make an investigation of Formigas Bank which had previously been directed by the department. This she did and the result has been forwarded to the chief of naval operations. It is expected that she will arrive in New

York on 4 November, which will be exactly six months from the time she last left a navy yard. This will be the first occasion so far as my knowledge goes where one of the ships of this squadron has carried out exactly the schedule laid down by the department for a tour of duty in these waters.

Orders were received from the department under date of 25 October for one vessel each of this squadron to participate in the Armistice Day celebration at New Orleans and Mobile. The *Tacoma* and *Sacramento* have been ordered to these ports in compliance therewith.

Since leaving Balboa on 13 September I have cruised in the *Dolphin* and *Niagara* 4,000 miles and visited ports in Honduras, Guatemala, Cuba, and Haiti.

Prior to that I visited ports in Costa Rica and Nicaragua. In all of these places I was most cordially received and officials made every effort to entertain us and to show their appreciation of the visit of an admiral to their port. Invariably at all official receptions I have made a little speech informing our hosts of the nature of our visit and the mission of this squadron; carefully explaining that our presence had no diplomatic significance nor any connection with their politics; and hoped that in the future they would look upon the arrival of vessels of this squadron in their ports with pleasure and not with fear that their presence was due to an intention to exert pressure on their Governments or interfere in behalf of any political faction. I am firmly of the opinion that this cruise of mine has been of great benefit in promoting friendly relations with the countries that I have visited and that it has been excellent thing for the Navy, the Government of the United States, and the people of countries at whose ports I called.

JAPANESE FAR EASTERN PROBLEMS.

Source: Japanese Press.

10 October, 1921.

PREMIER HARA AND MR. BLAND.

A Criticism of Mr. Hara's "Conditions of Permanent Peace."

In an article entitled "Pre-Requisite Conditions of Permanent Peace," published simultaneously in the Revue Diplomatique and the Jiji, the authorship of which is assigned to Premier Hara, though evidently penned by the editor of Revue Diplomatique, we find these words: "The peace of the world requires as its essential conditions that no nation shall take a dominant attitude toward others; that the

movement of commodities and raw materials, as well as the intercourse of peoples, shall be free so that livelihood of all men shall be secure; that there shall be no discriminatory treatment between races; that no nation shall be allowed to stand by its egoistic conception of justice and raise difficulties for others." We do not know how much of the sentiment expressed in these words is to be ascribed to the premier and how much to the editor, but there is no doubt that it is the prevailing sentiment of the Japanese people. Those who do not know what the Yap and Shantung questions are understand these words. They strike a most responsive chord, because they touch the question of Japanese livelihood. To critical minds there is no doubt that American influence has greatly contributed and is still contributing to the material welfare of this people, but the masses and even intelligent persons in their uncritical moments feel a sense of American oppression on the national development of this country.

A Dangerous State of Mind.

How much of this sense of oppression is rightly attributable to the American attitude is a highly debatable and entirely fruitless question. It is, however, a dangerous state of mind, and it can not be dispelled unless the attention of the people be turned to more constructive ideas. To postulate ideal conditions of peace in the present order of the world is asking what can never be obtained. To insist upon them is a challenge to war, incitement to hatred. They can only be suggested in a mild ironical temper lest humanity should forget that there are greater problems of peace which it is not yet ready to face.

The more serious part of the article ascribed to Mr. Hara is that in which he quotes J. O. P. Bland from the London Times. Mr. Bland, after dwelling at length at Japan's economic difficulties, especially her overpopulation, in a very sympathetic tone, seems to urge the necessity for finding an outlet for her surplus population and also draw materials for her home industry. He finds that outlet in Mongolia and Manchuria. The same idea has frequently been advocated in both England and America. It has recently appeared in connection with the plan of the international control of China ascribed to Mr. Hoover. Though the idea has recently become less popular owing to the growing jealousy and suspicious of Japan's motive, it was a common idea 10 years ago when I was a student in American universities. The outlying provinces of the North China were then thought to be natural and legitimate fields for Japan's development. They were and still are unquestionably in the path of least resistance for Japan, and her policy has naturally tended to develop in that direction, where anybody can now see impressive monuments of her constructive colonial work.

Will Not Solve Population Problem.

It will no doubt be a great relief for Japan if this undeveloped territory be assigned to her unhampered economic activities by a definite international agreement. It will release her pent-up energy, which is now poisoning her heart. But there are two reasons why I do not believe that this will solve the Japanese problem. The first is that the Japanese are not a colonizing people. They will go to a place, like California, where all the facilities for productive and remunerative work are already provided so labor can immediately be applied at a profit. But Manchuria and Mongolia are very different places. When we see that even at home the rough labor is given to Koreans, we should know that out in the wilderness of North China, Japanese labor has absolutely no hope to compete with Chinese labor. There for a long time labor will not yield the same return as at home. A simple economic law, therefore, prevents Japan's surplus population from flowing into these regions. The operation of this economic law can to an extent be mitigated if the Government undertakes to prepare the ground for profitable work and protect the settlers, but this is exactly what the Government has not done so far, for the simple reason that it is not a paying proposition. The second reason is the probable effect on our relations with China and Russia if the Government running the project at a loss should make this territory a colony of Japanese people instead of a happy hunting ground for capitalists. This effect would have to be reckoned with in the future, if not immediately. The driving of a Japanese wedge between the two big nations will be a constant source of unrest. It has either to be driven in or to be pulled out. And this situation will easily lend itself to the militarist's ambition, from which we are happily escaping. We do not want to create a new condition that will perpetuate military intrigue, which will defeat itself in the end. Ruling Korea is a difficult enough task for us. If we are wise we will not accept the task of policing further territories, for whatever be the international agreement it must in the last resort be defended by Japan's own army. Mongolia and Manchuria are out there for the capitalists' exploitation through the ordinary channels of economic law and not for colonization. To make them permanent Japanese settlements is not desirable. It will not even temporarily solve her population question.

A Confusion of Thought.

To return to the Revue Diplomatique article, our premier started with an eloquent plea for ideal conditions of peace, which if literally enforced amount to challenges to war, but are correct abstract principles, and then unwittingly slipped into Mr. Bland's position, which in my opinion is a hopeless confusion of thought but is within

the domain of probable practical policy. It is the business of a statesman to see the illusion of both positions and strike out on a policy that is both practical and rational.

The creative energy of the Japanese people must find an outlet. This is essential. But as conditions of the world now stand, either to demand the open door of the whole world or to claim an exclusive field is not a wise policy. And to brood over this dilemma is provocative of a desperate state of mind. But the means of relief is to be found at home. Place ourselves in the position of the Germans, with this advantage, that we have come to it undefeated and with all our fortresses intact, and we understand our problem. Japan's future is to be found in the effort to build up a superior social system and superior quality of men. Even if the doors of the whole world are bolted against us, great China is at least open for peaceful penetraditon by keen traders, alert enterprisers, technical experts, trained mechanists and professional of all sorts, who will work with fairer and more efficient methods than our western competitors. The effort to produce a better quality of men and distribute them through China, Siberia, or any other place where their services are not discriminated against will take care of our population question better than exclusive possession of Manchuria and Mongolia. All that we need to enforce this policy of peaceful penetration is a defensive strength adequate to defy and frustrate any attempt to violate the principles of the open door and equal opportunity in the Orient, which is in other words the principle of competition by merit.

Is Japan Equal to the Task?

If we are to be beaten in this game we can blame nobody but ourselves. I must, however, confess to a doubt if Japan is equal to this new task. There is a fear that her real difficulty is not so much in her foreign relations as in the tendency toward internal corruption, which she shares with the rest of the world. Our business men, whom a turn of fortune has made the leading class of this country, are not awake to their responsibilities. Our young men appear to be of a totally different quality from those of the creative period of the Meiji era, when a penniless boy could aspire to be a minister of state without absurdity. Now the ambitious ones are dreaming of marriage with wealthy girls or secretly nursing a revolutionary thought. The ordinary majority are morally indifferent and dissipating their energies in pursuit of evanescent pleasure. Accidental fortune is prized and merit is at discount everywhere. The social system is so rotten that it is a common remark among discerning people that this state of thing can't continue for very long. The best reflection of the corruption can be seen in literature, which has sank to the lowest limit of sensuality and sentimentalism. If litera-

ture is a reflection of the emotional life of a people, there seems to be no creative impulse astir among the Japanese people of this generation. But this is a big subject; I hope to come back to it at a more suitable occasion.

To the credit of the practical sagacity of the premier's mind it must be noted that though he quotes Mr. Bland at length, he does not necessarily commit himself to Mr. Bland's view, and also that despite his eloquent plea for ideal conditions of peace, he ends this article with an emphatic statement of his desire for the friendship of America, England, and China in very much the same tone as that used by Mr. Lloyd-George.

FRENCH NAVAL TRAINING METHODS.

Source: Reliable.

(14956.)

8 October, 1921.

1. The following is an interesting article on new French training methods, which appeared in "The Naval and Military Record" (English) of September, 1921:

2. The Parliamentary vacations are drawing to a close, and this brings nearer the prospects of angry debates in the Chamber of a possible ministerial crisis, as deep dissatisfaction prevails as to the way in which French interests have been defended on the High Silesia question; and no wonder, since the safety of France and the possibilities of an all-round disarmament depend on the maintenance of a strong Polish State capable of preventing an anti-French (and also indirectly anti-English) coalition of Boche and Bolshevist forces. Still, confidence is felt in the tried ability of Premier Briand, and also in his well-known pro-English sentiments, to find a satisfactory issue out of the apparently inextricable situation. Meanwhile, designing, experimenting, and reorganizing are proceeding apace at Rue Royale. Indeed, splendid work has been done in all branches of the service during the last two months. "Vacations" is a blessed word in the state departments of our Republic; it means methodical progress uninterrupted by ceaseless meddling on the part of good-intentioned politicians.

3. The Première Escadre de combat has regained Mediterranean waters after two months of visiting, feasting, and banqueting in Channel and Atlantic ports, intermingled with bona-fide training in coastal navigation and combined exercises with the Brest and Cherbourg flotillas, that have received heavy reinforcements and are becoming redoubtable mosquito forces since being placed under the authority of the pugnacious Prefects Maritimes Schwerer and

Barthes, who are never more happy than at sea with their pennants hoisted on board small torpedo-craft. Thus the first part is being completed of the program which the new commander in chief, Admiral Salaun, had set himself when he assumed, in July last, charge of France's principal battle squadron. The second and more important part of this work he will shortly tackle in the Mediterranean, as soon as circumstances permit him to array under his flag the six 24,000-ton Bart-Bretagnes and the three 14,000-ton croiseurs curasses that are nominally to compose his force, together with several escadrilles of torpedo and aerial auxiliaries. Besides being the embodiment of well-directed activity, the Breton commander in chief belongs to the Jeune Ecole persuasion, priding himself on being the successor of another illustrious Breton naval man, Admiral Aube. And, as he means business, the scheme of preparation for war on novel lines, which he is going to apply this year and next, deserves to be watched with attention, all the more so as his crews, that are gradually being brought up to full complement, have nothing left in them of the spirit of the Black Sea rebellion. Energetic weeding out, the practice of sports, and, above all, the greater percentage of Breton seamen on board, are raising anew the Flotte Francaise to its old standard of efficiency without mentioning the beneficial effect of better attention to the welfare and contentment of the lower deck.

4. Constant sea practice, as announced by Minister Guist'hau, is, of course, to be the motto of the battle force; and gunnery, which remains the raison d'être of battleships, is to be carried out on new lines, as an improvement of the methods inaugurated during the war by Admiralissimo Gauchet. Turrets in all war dreadnaughts have been modified, and permit firing up to some 27,000 meters distance, which is judged to be sufficient, though our 340 mil. cannon used against the Boche have fired at over 40 kilometers. Accuracy at these extreme ranges is a matter of aerial control, of stable, well-equipped flying machines, of thoroughly trained observers, and of a perfect signaling system. While on paper all problems have been solved by our clever mathematicians, but little has been done in practice; and it is practice that will tell in the extreme-range sport. Happily, professional interest will not be lacking, to judge from the fine preliminary preparation work conducted by the recently constituted aviation d'escadre, that outwardly possesses the necessary elements of usccess.

5. Moreover, Admiral Salaun, who has had in the last war a comprehensive experience of operations at sea, and is besides a go-ahead man of progress, will not repeat the mistake of some of his predecessors, who considered the gun as their ultima ratio and their all-in-all, and consequently limited their field of mental activity to the

study of those problems that had something to do with artillery duels at moderate range. Although the 24,000-ton Bretagnes might be superior ballistically to the remarkable Dorias of Italy, they would nevertheless represent a small and somewhat fragile asset of strength if their value were to reside solely in their guns and in their training for fleet actions in pre-war style. More is aimed at, and no wonder, as under the novel conditions of sea warfare France's power in the Mediterranean may be said to be invested mostly in the offensive radius of action of Bizerta, Oran, and Corsica points d'appui, as well as in the capabilities of the torpedo and aerial flotillas that will dot her extensive sea frontage. Six or seven battleships, even if in good fighting trim, are little in themselves, but they may become much if they can ever be assured of striking in cooperation with adequate and well-trained coastal flotillas and supercannon batteries, if when moving across the western Mediterranean, at all times spanned by wireless and aerial transport communications, the admiral in chief can feel, at a safe distance across his van as well as abeam and in the rear, a double and imperviable screen of weatherly and reliable aerial and submarine satellites, guarding against all possibilities of surprise, and giving time for tactical maneuvers and for his heavy guns to pound with some effect on incoming enemy. This picture—it is for the present little more than a dream—while requiring time and finances, is above all a matter of will and stability at the head and of enthusiasm among subordinate officers for the hurricane-like character of the contests of to-morrow that will be a game of speed, initiative, and daring. To bring his heavy guns early and effectively into the fray is no longer to be the main preoccupation, haunting the brains of French chiefs, if swifter and more decisive results can be got with less risk out of the torpedo and bomb. We are entering a new world in strategy and tactics, and efficiency will be more and more governed by the growing interdependence between sea, land, and air power; and for this reason the pioneer work Mr. Salaun will accomplish at the end of the flotte de combat can not fail to be epoch-making in Gallic annals.

6. The prevailing opinion in British, and also in French, official circles that the world conflict has conclusively demonstrated the utter inability of the submarine to ever control the seas is meeting with an increasing number of objections, mostly as the result of the reaction in favor of submarining determined by recent German publications. Admiral Daveluy boldly stated that Bocheland would have won had she invested in submarines instead of in battleships, and now, even in semi-official organs, the opinion is volunteered, with the support of statistics, that the Boches had actually the means of winning the war but for the meddling of politicians with the conduct of submarine warfare.

GERMAN-JAPANESE RELATIONS.

Source: Reliable.

(7510–C.)

23 September, 1921.

German activity in Japan commenced to manifest itself immediately after the Armistice. This activity manifests itself in many ways, i. e.:

1. By a propaganda officious and insidious (through relations with innumerable military men) which began before the official campaign, and of which the center is ex-Capt. Von Knorr, ex-German naval attaché at Tokyo. Von Knorr returned to Japan in 1920 ostensibly as the correspondent of the "Local Anzeiger."

2. By an official propaganda, relations with the Japanese Government, which is conducted by the mission of which Dr. Solf, the German ambassador, is the head.

3. By the reestablishment and the development of the former industrial and commercial relations.

I. Von Knorr lives in Tokyo and makes frequent visits to Yokohama. According to information received from reliable sources he (*a*) distributes journals and pamphlets. (It is said that he got out of the Customs at Yokohama on the 14th of June, 1920, 14 large cases containing a complete printing outfit, which has been transported to Tokyo. Word has also been received that he has distributed free copies of the German-American magazine, The Nation, containing articles hostile to the Allies. The translation of these articles into Japanese was paid for by him.

(*b*) Spoken or verbal propaganda. On 26 April Von Knorr at the Tokyo German Club at a strictly private conference made a discourse on the subject of the treaty of peace and the economic situation of Germany.

On 27 September, 1920, Mr. Lehmann, secretary to Von Knorr, at a conference in the Tokyo Y. M. C. A. Hall, made a speech repeating and commenting on the address made in Tokyo several days before by Dr. Solf (German ambassador to Japan).

(*c*) Von Knorr served as intermediary for the placing of old German prisoners of war, officers, artificers, and technicians in the service of the Japanese Navy, and in certain Japanese industries which are connected with war work; for the placing of engineers and technical experts coming from Germany to enter the service of the Japanese Navy, and of certain industries connected with war, i. e., the making of munitions and explosives.

It is established beyond doubt that a great number of engineers and technical men are employed in naval arsenals and in private iron and steel works (carrying on naval construction) and in Government works.

This personnel is utilized for the construction of motors and aeroplanes and for the manufacture of munitions or of explosives in factories belonging to the Navy or to the Government.

At Kobe alone during the past year there were 20 engineers and technical German specialists in naval construction and in the manufacture of motors, and in the service of the following companies: Kawasaki Dockyard and Mitsubishi (Kobe). These two companies construct submarines for the Government. The Kobe Electric Co. manufactures electric motors of great power.

During the past year more and more German engineers and technicians continued to arrive at the Kawasaki works; the engineers receive 2,000 yen per month and the technicians 1,000 yen. Both receive 1 per cent of the dividends of the work for the building of submarines.

Von Knorr has frequent official relations with Japanese official circles, particularly naval and military. On 24 July, 1920, the Japanese gave a dinner in his honor, at which were present Messrs. Mechlembourg and Selle, secretaries of the new German ambassador; Col. Matsuki, A. D. C. to the minister of war; Maj. Aoki, and a Russian colonel (Count Sollchoub), belonging to the Syrsboyarski (Semenoff).

It is said that Von Knorr has made contracts with the minister of the Navy and with the great shipbuilding companies of Mitsubishi and Kawasaki for the supply of a considerable number of tons of German steel.

One portion of this steel to come from Germany and another from America, where the Germans have purchased foundries. These contracts were signed about July, 1920. Payment to be made by the cession of Japanese merchant vessels to Germany. At the conclusion of this arrangement Von Knorr was entertained at the Peers Club by Admiral Okada.

During the past year Von Knorr also made a contract with the Kawasaki Works to build within 12 months six merchant vessels of about 10,000 tons deadweight, for the North German Lloyd, and to be used for running between Germany and South America.

(*d*) It is almost certain that Von Knorr represents his Government officially as naval and military attaché, which is contrary to the spirit of the treaty of peace. He does this very easily and successfully on account of his previous numerous connections with military and naval circles.

Before Maj. Katsui left Japan for his post as military attaché at Berlin he conferred with Von Knorr.

Von Knorr put himself in personal contact with political and military personages living in or visiting Tokyo, and nothing escapes him which is of interest on the subject of the relations between Ger-

many, Japan, and the various governments, which are actually dividing up old Russia.

For example, on the 14th of May, 1920, at an evening entertainmnt Von Knorr had an interview in a room of the Seiyoken Hotel in Tokyo with the representatives of Ataman Semenoff (Gens. Athanorsieff, Kyroshoyarski, Nikonoff) as well as with the representatives of the Grand Duke Nicholas.

This military mission of Semenoff, which came to Japan to treat of an understanding and the supply of arms and ammunitions, was received on 20 May, 1920, at the Nobles Club in Tokyo at a banquet presided over by the vice president of the House of Peers. Twelve Peers and 15 Deputies were present.

Von Knorr is also president of the Deutcher Aben Society for the mutual assistance of Germans in Japan, and for German propaganda.

II. Official Activity.

Doctor Solf, who finally presented his letters of credence as German ambassador in March, 1921, is remarkably active.

At a banquet tendered by Baron Sakatani (one of the great Tokyo bankers) on the 25th of September, 1920, Dr. Solf naively remarked in the address he made that it was not in the field of battle that the fatal blow was given to Germany, but at Versailles. He greatly praised the commercial expansion of Japan, and expressed the hope that he might see the commercial relations of the two great peoples, German and Japanese, restored to their amicable prewar status. "Our two countries," he declared, "should work hand in hand in the paths of industry and commerce."

These remarks found an echo in the Japanese press. The Yorodzu conducted a campaign in favor of a rapprochement between Japan and Germany.

Dr. Solf has negotiated with the Japanese Government for an exchange of problems—students between Japan and Germany, 10 professors and 60 students of each country are to be sent by each country. The personnel to leave their respective countries in September. The Japanese students to be provided for in Germany at the expense of that Government, and vice versa.

A complete program of scientific collaboration has been established between the two peoples. Japan to furnish the capital and Germany the scientists and their labor.

Dr. Solf travels constantly and pays frequent visits to the German colonies in Yokohama and Kobe. He organizes schools and night-study classes, *where the German language is taught without cost.* On the 5th of November, 1920, at Kobe, in the German Club, he made

an address full of optimism on the economic and financial situation of Germany.

At the embassy Madame Solf herself conducts a free course in the German language.

Japan's sympathy for German science was manifested by the gift of Mr. Hochi (president of the Pharmaceutical Society of Tokyo) of 2 million marks to the German Government to aid German science.

There has been a campaign in the Japanese press in favor of German science. Among the most important of these articles is one by Dr. Katsurada, M. D., entitled "Germany remains the center of the scientific world." The doctor inveighs against the Japanese Government, which arrayed itself with the Allies to exclude Germany from the International Scientific Conference.

Marquis Okuma recently published an article in which he deplores the backward state of Japanese science, and sees the remedy in the assistance that can be given his country by German specialists.

The Japanese Government is full of sympathy for the German planters who were settled in the Carolines before the war and have given them great facilities for returning to their old holdings, *and in many cases have restored their properties free.*

Other examples of Japanese partiality for the Germans are: In May, 1920, 58 unfurnished apartments belonging to Austrians and Germans at Yokohama, were sold at public auction. The purchasers were limited to Japanese, *and 12 of these apartments were bought back by the owners through Japanese, at a nominal price.* Von Knorr advanced to these people more than 116,000 yen.

III. Renewal and Development of German Industrial Activity in Japan.

Nearly all the German firms which were out of business during the war are now doing business again. Among them are Mabholz & Co., Sulzer, and Rudolph & Co. Others continue business under Japanese names. Ever since the signing of peace every ship which arrives brings many German business men and commercial employees. The new German commercial firms are Homberg & Co., Bouger, Peters & Co.; Brenzell; Breger Co.

Most of these are commission houses for export and import in general. All these business men bring with them quantities of cloths, colors, aniline dyes, drugs, cutlery, gloves, paper, and haberdashery.

The ships that form a regular service between Germany and Japan, and which belong to the Nippon Yusen Kaisha and the Osaka Shosen Kaisha, bring from Germany chlorate of potash, dyes, steel, machinery, ribbons, and chemicals. They arrive every month with a great number of tons of steel in ingots and in sheets.

From the 8th to 20th November, 1920, there arrived at Kobe and Yokohama from Germany, by way of the Dutch East Indies, about 23,000 tons of steel in sheets and ingots. The ships that brought this steel were four Japanese, two Dutch, and one Norwegian.

The construction of the 8–8 fleet is undoubtedly connected with the periodical arrival of this steel.

The same vessels brought about 2,000 tons of various chemical products and German coloring-matter. These products were: Carbolic acid, soda, caustic soda, mercury, potash, alum, phosphates, aluminum, nitric acid, dyes, methyl, violet, rhodamine, black sulphur, yellow sulphur, and all kinds of tar derivatives.

In all, since 1 November to 24 November, 1920, 3,200,000 yens worth of chemical products and dyes were imported into Japan from Germany.

All of these German chemical products which arrived in Japan were put in government warehouses, for sale by government monopoly. Their arrival caused the price of domestic products to fall. The greatest German importing house for these products is Illies & Co.

There are six other Japanese ships besides those of the Nippon Yusen Kaisha and Osaka Shosen Kaisha, and also ships of Holland, Norway, and Denmark that sail from German ports.

The Japanese importers complain that the number of German establishments since the war is double the number here before.

Finally, the morale of the Germans in the two great centers of Tokyo and Kobe seems to be quite high. They gather together in the evenings at their club to speak their own language. They brag of their excellent standing in Japan, and show themselves full of energy. There are among them old officers who, having nothing to do in Germany, have gone into business, receiving from German firms long-term credits. And these Germans boast that, thanks to various subterfuges, such as police guards, Germany can put in the field nearly 500,000 soldiers equipped with hidden arms and fully uniformed.

The Germans in Japan recount how tramp steamers smuggle cargoes between Germany and Sweden, Denmark, and Holland. For the principal cargo they carry authorized merchandise; for the smuggled goods they transport war material, which they have failed to turn over to the Allies.

DESCRIPTION OF THE GOERTZ PERISCOPE AS INSTALLED IN THE LATER GERMAN SUBMARINES.

Source: Reliable.

(6490–A.)

30 March, 1921.

The standard periscope differs from the types hitherto used, in which the eyepiece and objective are installed in one and the same tube, by being composed of two tubes, the upper one of which, carrying the objective section and henceforth called the objective tube, telescopes in housing into the lower one carrying the eyepiece and henceforth called the eyepiece tube. By this means the observer is enabled to remain continuously in the conning tower and always beholds a sharp image of the object independently of the height to which the objective tube is elevated. This is true for the total elevation of the objective minus about 1 meter.

In a periscope 6.2 meters in length, the elevation amounts to 4.355 meters. Consequently, starting with the fully extented periscope, the observer would have a sharp image of the object over a distance of about 3.3 meters, while within the last meter of the telescoping distance the image would be blurred.

The necessary dimensions of the boat and tower cross-section for a periscope 6.2 meters in length, as well as the guide casings, are shown hatched with the data added.

When the periscope is completely housed, the tapering end of the objective is entirely inclosed in the guide casing which is screwed to the conning tower.

Since neither the eyepiece nor the observer participate in the elevation of the objective tube, this type of periscope has the following advantages over those hitherto used:

1. The pressure-proof shaft in the central station can be made considerably smaller in diameter than when the observer's seat must be elevated likewise. Space is thus saved in the central station.

2. All the elevating mechanism is installed inside the eyepiece tube. It is therefore absent from the conning tower.

As in the case of previous periscopes the objective tube can be raised and lowered electrically and by hand.

3. The lever for actuating the elevating motor is installed on the eyepiece tube and can readily be operated at any moment by the observer.

4. The training of the entire periscope, that is, the objective and eyepiece tubes together, can likewise be done electrically or by hand.

For rotating the periscope by electrical means there is installed on the eyepiece tube, to the left of the observer, a convenient hand grip, the movements of which are followed automatically by the periscope,

both as regards direction of rotation, and in proportion to the movement of the hand grip; that is, if the latter is moved but slightly the periscope will follow very slowly in order that the observation may be made with ease; if the lever is moved over a wide angle the periscope follows proportionately faster.

5. The wheel for training by hand is installed on the eyepiece tube to the right and can likewise conveniently be operated by the observer. This can be done independently of the electrical training without the use of switches of any kind, so that if the turret is being trained electrically, for example, its movements can be accelerated or retarded by manipulating the hand wheel.

6. The graduated circle which is secured to the roof of the conning tower is constantly visible in the eyepiece. By this means the observer can ascertain at any moment the visual direction in degrees without losing sight of the target.

7. The observer occupies the seat during the entire service at the periscope, from which he can, without other aid, operate the electric elevating and lowering device, the rotating mechanism, the adjustment for sharpness of image, vary the magnification and the inclination of the objective prism, *and operate any other devices located in the conning tower.*

A double prism is installed at the lower end of the objective tube in such a manner that the beams of light passing downward through the objective tube are deflected and carried upward through the eyepiece tube and fall on the eyepiece.

The image-tilting device in the head of the objective tube is designed to afford a convenient observation of the enemy by keeping the image still when the sea is rough and also to make it possible to cover the target when the boat is sharply inclined.

This device is operated by inclining the hand-grip. By shifting the latter through an angle of 180°, the two magnifications 1.5 and 6 times will be attained.

The flange of the guide casing is made of such a diameter that the periscope, completely assembled, can be passed in or out through the conning tower roof. Furthermore, the objective tube can be exchanged without removing the eyepiece tube or the guide casing.

The periscope weighs 1,900 kg.

JAPAN-AMERICAN RELATIONS.

Source: Reliable.

The Department of the Navy in general will be interested and gratified to learn of the unusually favorable impression made on the Crown Prince of Japan and his entourage by Admiral Niblack's courtesy, friendliness, and hospitality.

This was apparently so noteworthy that numerous Japanese naval officers have made a point of speaking of the matter to both the naval attaché and his assistant.

They stated that the Crown Prince was so favorably impressed by Admiral Niblack that he on several occasions made inquiries about him of his suite, and that as a direct result of this favorable impression he twice cabled back to Japan for permission to include the United States in his itinerary. It was with difficulty, and only because the Government felt that his tour should be limited to six months on account of the Emperor's health, that he could be dissuaded from this desire.

The fact that Admiral Niblack proceeded to Gibraltar to pay the courtesies of the United States to the Crown Prince has created the most favorable impression on the Japanese Navy.

It was a stroke of genius that has produced most beneficial results.

JAPANESE ARMY-NAVY RELATIONS.

Source: Reliable.

10 October, 1921.

On September 21, 1921, editorials appeared in nearly all the Japanese papers of Tokyo regarding the future uselessness of battleships and battle cruisers. Many of these articles were headed "Bury the Battleship" and their wording and statements were so similar that there was no question about their having emanated from a single source. They purported to be based on the results of the United States bombing tests.

The Navy Department believes the aviation branch of the Army had these articles published and attempted to counter them by submitting to the press arguments to disprove the contentions. Not one paper, however, published the Navy's articles.

On September 23 the "Kokumin" (which is controlled to a certain extent by the Army general staff) stated in an editorial on the Conference delegates that if Admiral Baron Kato was selected as a delegate it would prove that the navy intended to dominate the army, etc.

These cases are cited to show the antagonism existing between the army and navy. This state of affairs has existed for some time and has been reported on numerous occasions.

The breach between the two military services seems to be rapidly widening and now amounts to almost open hatred.

It is generally believed by naval officers that the army can and should be reduced by half. Whereas the army is determined to maintain its status quo, and fears that if Admiral Kato goes as a

delegate he will dominate the military delegation and force Japan to agree to army reduction.

This antagonism has all the ear-marks of being more than a break between the Army and Navy. It looks like a revival of the old struggle for supremacy between the "Chosu" and "Satsuma" clans, with the Satsuma clan gradually gaining power.

One of the simplest means of checking it and of reestablishing a certain amount of harmony is to appoint Gen. Tanaka (recently retired minister of war) chief of the Army general staff upon the retirement of Field Marshal Uehara (at the end of this year). Gen. Tanaka is reported to have completely regained his health and to be in excellent physical condition. Therefore the above appointment is not at all improbable. Gen. Tanaka has the confidence and support of Prince Yamagata and he will be able, as he formerly was, to control and dictate to the Army.

While minister of war, Gen. Tanaka worked in harmony with the Prime Minister and held the Army general staff down as much as possible. This action apparently met with Prince Yamagata's approval and it is only reasonable to expect that he would act the same again.

JAPAN'S ASIATIC POLICY.

Source: Japanese Press.

10 October, 1921.

"Japan is not building a great Navy to attack America; neither is she building it for self-defence. The purpose of the navy is to deter any other power from interference in her Asiatic policy, whatever form this policy may take.

"The object of the proposed renewal of the Anglo-Japanese alliance, similarly, was not to create an Anglo-Japanese combination for war on America, but was, from the Japanese point of view, a measure for preventing combined pressure from Britain and America to modify Asiatic policy. Britain may have favored the renewal as a means to counteract the Japanese War Office and American money operating in conjunction in China.

"Or the British Foreign Office may have had some obscure idea of spheres of influence crystallizing into Empire.

"The Oriental Economist, unique for its free trade and general liberal principles, says in a series of articles published in September:

"'In order effectively to face Japan in the Far East and prevent Japan having her own way there, America thought it necessary to have in the Far East sufficient force to cope with Japan. Hence the establishment of strong naval bases in Hawaii, Guam, and the Philippines and the floating of a great fleet on the Pacific. In doing all

this, America has not looked for chances to attack Japan; she only wants to have her say on Far Eastern problems, and in order to have her say with effect she must have sufficient force at her back.'

"This is merely the converse of the object of the Japanese Navy being to prevent any interference with Japan's Asiatic politics. The policy is one fraught with danger. The danger is much less than in the similar competition between the German armaments on the one side and the French and British on the other, only because of the distance separating the countries.

"The Oriental Economist recognizes that China is a field that can hardly be withheld from American capital without there being results in the way of armament competition in which Japan is sure to come off worst.

"Even unrestricted capitalistic exploitation is more likely to find an equitable settlement without recourse to arms or the threat of such recourse.

"The Oriental Economist has full confidence that Japan's propinquity to China and other national advantages will give her a larger share of the profits of trade and influence than she could hope to obtain by competing in armaments with much wealthier powers. This paper is convinced that free commerce rather than arms offers better opportunities to Japan. The militarists are able to point out that Britain's sphere of influence on the Yangtze is much more valuable than Japan's in Manchuria, but when it comes to justifying their policy to the Japanese public—without regard to the opinion of the world—the militarists can rightly point to the fact that their success has been of a much more complete kind in their special spheres than that of Britain; that they have, in fact, closed the door to their own sphere while the door to Britain's sphere is still wide open to them.

"From the facts of the case it appears, therefore, that Japan's naval expansion is directed, not at maintaining the open door so much as at closing it, and the Economist is really asking for the relinquishment of a substantial gain when it suggests throwing open Manchuria and Mongolia.

"Japan's Asiatic policy, as directed by the militarists, tends toward the closing of the door to other nations in China and to this degree the Washington Conference is necessarily directed against Japan, unless Japanese statesmen can bring themselves to take as liberal a view of affairs as the Oriental Economist and understand that the guarantee of a fair field and no favor in China is a much surer guarantee of expansion than a monopolistic policy backed by the threat of force—a threat made from an advantageous position, it is true, but against powers with whom Japan can not compete in wealth, and who will in the end take up the challenge."

JAPANESE ATTITUDE TOWARD LIMITATION OF ARMAMENTS.

Source: Reliable.

10 October, 1921.

Representatives from the Navy Department, War Department, and foreign office have met on several occasions to decide what fundamental principles should be pursued regarding armament limitations.

The conclusions to date are fairly reliably reported as follows: 1. The Army has refused to consider any reduction whatsoever under any conditions. (It is more than likely that the Japanese Army delegation will endeavor to obtain the cooperation of the French mission to prevent Army limitation. The Japanese Army delegation will almost certainly be a thorn in the side of the other Japanese delegates.)

2. The conditions to be insisted on for naval reductions are: (*a*) As it is contrary to the fundamental principle of armament limitation that any one country be permitted to possess such a superior naval force as to enable it to gain a decisive victory over another country, all powers are to reduce their naval armaments in conformity with the standard of the country which has the smallest navy. (*b*) As fortified naval bases in the Pacific add greatly to the strength of a navy, no country shall be permitted to have any such bases. For instance, the naval bases at Hawaii, Guam, and Manila must be abolished.

(*c*) Navies should be strong enough only to serve for national defence purposes on the least scale. ("The 8-and-8 program was primarily adopted to make Japan's defence absolute, but in order to foster universal peace, and as a means of successfully carrying out the object of general limitation and to lighten the burden of her people, Japan is willing to reduce the program mutually with other countries.")

(*d*) As it is difficult to destroy vessels already completed and to suspend completion of those already commenced, the limitation should be fixed to commence after a certain year.

For example the date of completion of the United States naval program should be readjusted, extending the date beyond 1923.

3. Other phases of naval disarmament discussed were: Limitation of type and tonnage of ships, limitation of power of guns, limitation of number of men, limitation of naval budgets, limitation of new arms, including aviation and submarines.

The conclusions reached regarding the above topics are not known.

JAPANESE ATTITUDE TOWARD THE CONFERENCE.

Source: Reliable.

10 October, 1921.

The Army and the naval and civilian elements that are in agreement with the Army policy of dominating China politically and economically and of remaining in Siberia and the Saghalien Province see in the Washington Conference a most serious menace to their doings and policies on the Asian Continent.

The liberal body of thought and the taxpayer is in favor of the Conference, because the people are struggling under heavy taxes and welcome any hope of reducing them.

Up to the present moment the foreign office, Army, and Navy representatives conferring in Tokyo have apparently been unable to agree on army reduction, but are believed to have formulated their general policy.

The Army, it is said, refuses to consider any reduction of its present strength (21 divisions).

The Navy is willing to come to some agreement for reduction, even for the 8-and-8 program (announced as the irreducible minimum for the national defense).

It would seem that there is much bad feeling between the foreign office and the Army general staff, and good feeling between the foreign office and the Navy, due to the fact that the Army general staff interferes constantly and successfully in the realm of diplomacy and that the Navy does not.

The Japanese press and the business interests and liberal-minded people have come to regard the Conference as more of an opportunity than a menace. Reduction of armaments has become popular in Japan, and the press and people are now in favor of the Conference for that reason. The discussion of Far East and Pacific problems, which when at first announced aroused alarm and indignation, is now regarded as not constituting any actual active menace.

During the past three months the press and people have gradually recovered from their first extreme fear and violent indignation and come to realize that the Conference is not an attempt to bring Japan to trial for her actions and policies in the Far East, but is a sincere effort on the part of America to abolish armament competition by an amicable adjustment of existing differences.

As a result of this change of attitude the foreign office and naval delegates will go to Washington prepared to do their share in making the Conference a success; believing by so doing they will remove the suspicion of the world and place their country in a favorable light; at the same time maneuvering China into an unfavorable position.

They hope through their skill in diplomatic exchange to obtain real advantages at the cost of small sacrifices.

JAPAN AND DISARMAMENT.

Source: New Zealand Press.

10 October, 1921.

It may take two persons to make a quarrel, but one nation can make a war, and one nation can set the world arming for its Armageddon. The success of the forthcoming conferences at Washington on Pacific policy and disarmament depends primarily upon Japan, not only because Japan is of all the great powers the most influenced by purely military considerations, but also because, racially and economically, she occupies a special position. Upon her falls the tremendous responsibility of saying whether she will accept the place which the white races have assigned her in the world's civilization or whether she will preserve her freedom of action, which almost necessarily means competitive arming. There are no real issues between the British Empire and the United States. Japan, her aims and her policy, is the unknown factor in the Pacific, and every hope of approximate disarmament depends upon a frank exchange of views with her. The difficulties of reaching a basis for negotiations with her will in any case be formidable enough; an initial blunder would make them almost insuperable. It would, for example, be crass folly on America's part to deny that Japan has established for herself a special position in China. Whatever the morality of the policy which has given her that special position, it is consolidated beyond challenge, and no international conference can now usefully dispute it. The white New Zealand and white Australia policies must also be taken for granted. They will not be sacrificed or compromised even for the sake of world peace. Finally, it is little short of essential that Japan should realize that the issues arising out of the treaty of Versailles, so far as they have not automatically settled themselves, are still open to review. She may reasonably claim that the principles of the treaty should stand, but so far as the application of these principles is disturbing good relations it should be considered afresh at the Washington Conference. Shantung and Yap are both test questions—the one to China, the other to the United States—and must be discussed, the more especially as Japan's continued presence in Shantung defeats the intentions of the Peace Congress. The reported decision of the Japanese cabinet to exclude these questions can only be persisted in at the risk of dooming the conferences to sterility.

To come to the root of the matter it is well to recognize that Japan's attitude to the conference will be determined by what may

fairly be called her "military party." Democracy in Japan is only a veneer. All real power still lies with the leaders of the ruling clans of Satsuma and Choshu, essentially military, aristocratic, and bureaucratic. There is a Diet, but it has little to do with the government of the country; the franchise is gradually being broadened, but the Diet is becoming more representative without becoming more authoritative. Politically the present condition of Japan differs little from that reached after the revolution, when the powers of the old feudal lords were transferred to the ruling clans. Practically every responsible official is bound either by ties of marriage or feudal patronage or by inherited loyalty to one or other of the two clans which since 1873 have controlled not only the Army and Navy, but nearly every department of the public service. The clan system remains an integral part of the life of the nation and accounts for the ease with which the general staff can override the foreign policy of the ostensibly responsible cabinet, and the employing class can perpetuate industrial conditions which would not be tolerated in any democratic country. It is true that disturbances are the mutterings of a rising storm, and in politics there is a distinct movement for responsible government. But the practically unanimous opinion of students of Japanese affairs is that the family system is still the strongest moral and political force in Japan. As long as it persists, the national virtue of loyalty is likely to maintain almost as strong a hold upon the masses of industrial workers as upon the army, and progress toward executive responsibility and parliamentary control will be slow.

Japanese policy is, therefore, determined ultimately by a military class, but it is not necessarily aggressive. The statesmanship of Japan is sagacious enough to realize all the risks of antagonizing the European powers and the United States. A purely military policy would almost certainly lead to a competition in armament, in which the superior resources of the United States would tell. It would antagonize China, and the Chinese have already proved by a wonderfully effective boycott of Japanese trade that they know something about economic retaliation. It would in the long run strain Anglo-Japanese friendship to breaking point and leave Japan to face the world alone. None realize better than Japanese statesmen the risks of presenting an uncompromising attitude to such a conference as Mr. Harding has called. They may be assumed to be at the moment weighing the advantages between arms and industry. Japan must find some additional means of supporting her rapidly-increasing population. Her primitive impulse is to seek conquests on the Asiatic continent. If she is to foreswear that ambition, and if she is to recognize that New Zealand, Australia, British Columbia, and California are irrevocably closed against her immigrants, she

is driven back upon the necessity of supporting a large population in a small and comparatively poor country by industrial development. In Japan's acceptance of that necessity lies the world's best guarantee of peace. It will save her from a crushing burden of armaments and from extremely hazardous military enterprises, but it presumes a large export trade, and Japan's best market will always be China. If the powers recognize Japan's special interests in China and her established claims in the region lying north of the Great Wall, self-interest should teach her to seek her future in industry rather than war. This happy outcome is the brightest hope of the Washington Conference, but it will be made possible only by a general recognition of Japan's extraordinarily difficult economic position and by Japan's determination to make her foreign policy no longer ambiguous.

OFFICIAL ANNOUNCEMENT OF JAPANESE EMPEROR'S CONDITION.

Source: Reliable.

10 October, 1921.

On 4 October the imperial household department issued the following statement, which was published in an extra that same afternoon.

When a statement about His Majesty's condition was published in April last, his nourishment and other bodily state was rather favorable. Since that time His Majesty has been recuperating. There is no change in point of his weight, sleep, and appetite, but there has been a reduction in the hours of exercise which he takes every day. When he walks he sometimes needs the help of attendants. The dullness of his attitude and the difficulty with his speech have increased of late and he is apt to feel weary. His power of attention and memory have also diminished. On the whole, his general condition indicates that he is not making favorable progress toward recovery.

In boyhood His Majesty suffered from a disease resembling meningitis and had many serious illnesses up to manhood and afterwards. This is thought to be the cause of the present condition.

It is with great regret that this announcement is now made.

The deduction in well-informed circles in Tokyo is that the Government has made this statement to prepare the people for a change—presumably a regency. It is quite possible that the Crown Prince will be declared regent within 30 days.

It may be that the Emperor's condition is actually worse or that it is exactly the same as it was last April, but that the Japanese Government had decided to prepare the public for eventualities.

JAPANESE FLEET ORGANIZATION.

Source: Reliable. (Japanese Navy Department.)

FIRST FLEET.

Commander in chief, Admiral S. TOCHINAI.

First Division.

Admiral S. TOCHINAI.

Nagato (flagship).
Fuso.

Second Division.

Vice Admiral K. KAWAHARA.

Chikuma (flagship).
Yahagi.

First Destroyer Division.

Rear Admiral K. SHIMANOUCHI, commanding.

Tatsuta (flagship).

Twenty-sixth Destroyer Flotilla.

Nire.
Kuri.
Toga.
Kaki.

Fifteenth Destroyer Flotilla.

Fuji.
Hagi.
Susuki.
Tsuta.

Twenty-fifth Destroyer Flotilla.

Nashi.
Take.
Nomi.
Kaya.

First Submarine Division.

Rear Admiral J. MATSUMURA.

Karasaki (flagship).

Third Submarine Flotilla.

No. 25.
No. 26.
No. 27.

Fourteenth Submarine Flotilla.

No. 19.
No. 20.
No. 22.

Temporarily attached to First Division for Maneuvers.

Airplane carrier.

Wakamiya.

Mining Division.

Aso.
Katsuriki.

Eighth Destroyer Flotilla.

Ariake.
Fubuki.
Kamikaze.
Hatsushimo.
Kisaragi.
Hibiki.

Temporarily attached to combined fleet during maneuvers.

Transport.

Seito.

SECOND FLEET.

Commander in chief, Vice Admiral K. Suzuki.

Third Division.

Vice Admiral K. Suzuki.
Kongo (flagship).
Kirishima.

Fourth division.

Rear Admiral H. Ida.
Kuma (flagship).
Tama.
Kiso.

Second Destroyer Division.

Rear Admiral S. Kuwashima.

Second Destroyer Flotilla.

Sawakaze.
Minekaze.
Yakaze.
Okikaze.

Fifth Destroyer Flotilla.

Hakaze.
Shimakaze.
Akikaze.
Nadakaze.

Fourteenth Destroyer Flotilla.

Kawakaze.
Tanikaze.
Kiku.
Aoi.

THIRD FLEET.

Commander in chief, Vice Admiral K. Oguri.

Fifth Division.

Rear Admiral S. Nakamura.
Kashima (flagship).
Katori.
Mikasa.
Iwami.

Third Destroyer Division.

Rear Admiral K. Otani.

Sixth Destroyer Flotilla.

Mogami.
Yudachi.
Mikadzuki.
Shiratsuya.
Yugure.

Thirty-first Destroyer Flotilla

Musashi.
Ushio.
Nenohi.
Wakaba.
Asakaze.

First Foreign Squadron.

Vice Admiral M. Yoshida.

Akashi.
Uji.
Sumida.
Fushimi.
Toba.
Saga.

Training Squadron.

Vice Admiral H. SAITO.
Idzumo.
Yakumo.

The ships on foreign stations October 1, 1921, are as follows:

China.

Akashi, Hankow.
Uji, Hankow.
Toba, Hankow.
Sumida, Hankow.
Saga, Changsha.
Fushimi, Ichang.
Minatsuki, Tientsin.
Kikutsuki, Tientsin.
Nagatsuki, Tientsin.
Utsuki, Tientsin.

Russia.

Mikasa, Askold Channel.
Fuji, Askold Channel.
Kasuga, Askold Channel.
Yodobashi, Askold Channel.
Chitose, Petropavlovsk.

South Sea Islands.

Yodo.
Matsue.

United States.

Yakumo, San Diego.
Idzumo, San Diego.

Other vessels, excepting submarines and older destroyers and torpedo boats, are not organized into divisions. They are mostly laid up at their home yards, with somewhat reduced complements of both officers and men (primarily to reduce operating expenditures), but are in condition to join the fleet at an instant's notice. A few are undergoing extensive repairs and alterations. This extended repair period (12 months) is periodic, namely, once every three years, when efforts are made to bring the ships up to date by alterations to fire-control system, etc.

The destroyers, torpedo boats, and submarines not operating with the fleet are organized into flotillas and assigned to various naval stations. They base on and operate from the navy yard of the particular station and are under the command of the commandant of the naval station.

They operate continuously, are able to join the fleet at an instant's notice. (As an example, the eighth destroyer flotilla's joining for maneuvers.)

JAPAN, LEGAL ADVISER TO DELEGATION.

Source: Reliable.

14 October, 1921.

Mr. Joseph E. de Becker, L. L. B., is sailing for Washington on the *Empress of Russia*, leaving Yokohama October 22.

He is to be legal adviser to the Japanese delegation, but is not officially attached to the delegation. Mr. de Becker is an Englishman by birth (born in London, 1863) but became a naturalized

Japanese subject for purely personal gain and professional advantages.

He was educated in England and America, began the practice of international law in Japan in 1894, and is the leading and most successful (from financial point of view) barrister in Japan.

Mr. de Becker has on many previous occasions performed services for the Japanese Government and for semiofficial organizations and is unquestionably the best-informed foreigner on Japanese law. Has written many, and the only good, books on various Japanese legal subjects.

He is a very cheerful, affable, and hospitable man, but an imperialist to the finger tips. Is a close friend, of long standing, of Mr. Ferguson (American advisor to Peking Government).

Mr. de Becker married a Japanese. He has two sons and two daughters. The daughters were educated at Wellesley College. The sons have been in school in America for several years and entered Worcester Polytechnical Institute this year. They intend to become United States citizens and have already taken out first papers. The sons wish to live permanently in America and the parents are anxious that they should do so, not wishing them to return to Japan.

It is very likely for this reason that the entire family wish to make America their home, and if Mr. de Becker finds a good opening at Washington for capitalizing his expert knowledge of Japanese law and far eastern affairs he will most likely settle there.

He intended to go to Washington to investigate the above possibilities and persuaded the Japanese Government to send him in connection with the conference by playing the Chinese against the Japanese. One day after his agreement had been reached with the Japanese the Chinese endeavored to employ him as their advisor.

As far as nations are concerned, he is really pro or anti none and would very likely serve the one that offered him the best terms, but would be loyal to that client. He is a man of normally good principles, but practically without a country.

JAPANESE MILITARY POLICY.

Source: Japanese Press.

10 October, 1921.

[Japan Chronicle, 16 September.]

A conference in Tokyo of representatives of the foreign office, War and Navy Departments, has held a number of meetings and decided on proposals to be brought forward at Washington by the Japanese Government somewhat to the following effect:

1. Provide for reduction of naval strength by every power to put it on the same plane as the power possessing the weaker navy.

2. All powers signatory to agreement to be concluded to undertake not to make any provision or arrangement on the Pacific as to provide naval bases.

(*a*) Restrictions should be placed on construction of vessels after a financial year to be fixed later, and that an extension should be made of the period of completion of the naval programs already drawn up, so as to regulate the increase of armaments.

In regard to conscription, it is said that the Japanese authorities have decided to adopt the same policy pursued at the League of Nations council meetings. The three departments will discuss matters relating to the restriction of airplanes and submarines.

The Army, after discussion by the Army general staff and the war office, has fixed upon the broad outline of the policy of reduction of military armaments and notified the foreign office.

Japan's Army should be maintained on the present basis of 21 divisions (296,000 officers and men in active service), but will consider limitation if other powers consent to limit theirs, the extent to depend upon the attitude of the other powers.

Japan is ready to remove her fortifications in the Pacific if America takes similar action; those existing already and those under contemplation.

Japan will keep her troops in Siberia until a common treaty is concluded between Japan and Russia.

The 21 demands must be recognized to the extent that Japan's rights in China will not be prejudiced.

[Mainichi, 18 September. "Discussion carried on by Representatives of Foreign Office, Army, and Navy at Naval Club, on 15 September."]

Japan may propose (*a*) a minimum of national defense measures to be basis of limitation of naval armaments. (*b*) Might even be willing to curtail 8-and-8 program. (*c*) Restriction should be placed on type and size of vessels and guns. (*d*) Question of bases will come up for much attention.

Japan will not start any new construction of bases at present. Will insist on fortification of Guam, Hawaii, and Philippines be not enlarged.

[Asahi, 23 September, 1921.]

Advocacy for armaments limitation has become a burning issue of the world. It will be decided by the economic strength of a nation to finance armaments. Japan's armaments have exceeded the capacity of the nation.

[Yomiuri, 23 September, 1921.]

Army as well as navy limitation will be discussed. The navy policy will be to reduce provided other nations do same, but the war office insists that the size of the Army should be decided at home

and not referred to an international conference. It claims army can not be reduced. It is an open secret that the representatives of the army and navy, recently conferring in Tokyo, had a dispute over disposition of fortifications under army.

What is this great army for? Is a great military power likely to develop on the continent? Will a naval enemy invade the Empire? Is the army for preventing civil wars at home?

These questions should be decided by the foreign office and the navy and army departments, not by the army alone.

[Chugai Shogyo, 24 September.]

Japan's armaments in Pacific are for defense—America's are a menace to Japan. We should not abandon our fortifications, even if America does this for her Pacific bases.

[Premier Hara, 24 September.]

In order to insure permanent peace on earth (1) it should be realized that no nation can force another to commit suicide; (2) it should be acknowledged that all the nations of the world are equal with reference to the desire for and right to existence and improvement; and (3) there should be guaranties for as general and diffused a distribution as possible of foodstuffs and materials of clothing and housing among nations. Nations should cultivate international justice and understanding.

[Current Review, September number.]

The charges of militarism or aggression are errors based on ignorance of the national character of the Japanese people and their history. National expansion was unpremeditated result of foreign pressure. This probably preserved Japan's existence.

By hard struggle Japan has succeeded in maintaining its national prestige.

Japan is suffering from overpopulation and lack of materials, these things menacing their very existence. Japan must be aided to live if she is to keep the peace of the Far East.

All Japan wants in Siberia is restoration of order, safety of life, property, transportation, communications, etc., necessary to establish and maintain trade between the two peoples.

[Yomiuri, September 23.]

The war office has taken up an inconsistent position with reference to the limitation of armaments. Gen. Tanaka, former minister of war, said in the forty-fourth diet that Japan must prepare for eventualities in China. This is the view of the war office. The posi-

tion of the Army is harmful to Japan's interests, letting the world believe Japan militaristic.

As long as army stays at its present strength the navy can not be expected to reduce.

The war office has given China a very bad impression of the Japanese.

[The Far East, Editorial, 24 September, 1921.]

The public question uppermost in most minds is the personality of Japan's chief delegate to the Conference. His appointment is apparently due by the end of the month, when England and France will have announced their chosen representatives. Weighty decisions will be made and the future of Japan will be affected for better or worse. Unless Japan goes with a fixed policy and a set determination the experience following the Chinese-Japan War will be repeated and international difficulties instead of being settled will be aggravated.

Japan is the power most concerned in the discussion of Far Eastern problems. She is to-day the one stable element. She should never have consented to a discussion of Far Eastern problems. We do not think much can be done by the Conference. Limitation of armaments should have been agreed upon through regular diplomatic channels.

England has severely cut her naval appropriation without consulting anybody. Japan is only carrying out a program decided upon years ago. Uncle Sam is the naval enfant terrible with his "second to none" ideas.

[Mancho, 5 September.]

England is now quite indifferent to the question of reduction of armaments. Newspapers and magazines in England contain articles on Japan's active expansion of armament, but make no mention whatever of England's own naval plans. Reduction of armaments is a question susceptible of solution by England and America, because Japan has no supply of iron, steel, and coal herself, and must therefore reduce automatically. Which is the more sincere about reduction, England or America? No further extension is the most natural way of reduction.

Competition of armament expansion will surely lead to war. If the Washington Conference fail, there will be a renewal of this competition and Japan will be unable to keep step with the much richer America.

The result of a war between Japan and America would in every way be disadvantageous to both countries. Though Japan can fight with America for a time, she will not be able to continue the struggle for long, because of her lack of fuel, provisions, etc.

[Kokumin, 27 September. "Uchida or Hara?"]

The responsibility for the Pacific conference so far as Japan is concerned is Hara's, who attempts to shift the responsibility by trying to find a man outside the ministry to head the delegation. The premier does not realize his responsibility. The foreign minister is at outs with the diplomatic advisory board on account of his conditional acceptance of the American invitation, and with the military clique regarding the Siberian policy. Regardless of what men are suitable to head the Japanese delegation, there are only two logical choices, and only they should be allowed to go—Premier Hara and Count Uchida (minister of foreign affairs). The premier fears that the foreign minister will make a failure at Washington, which might lead to the downfall of the ministry. The present ministry is the enemy of constitutional government. Uchida should go or resign.

[Yorodzu, 27 September. "Reason for Militarist Charge."]

The idea of some western countries that Japan is a militarist nation and that her diplomacy is that of the militarists is not without foundation. To-day any important foreign policy is decided by Marshal Prince Yamagata, the genro. The premier and foreign minister do not decide. His views were also put into operation in the time of Okuma and Terauchi ministries. Even though Gen. Baron Tanaka has left the Hara ministry, he is still influential in it, through his indirect activity. It is as in Germany in the past. Bismarck tells of the diplomatic activities in Russia of the German Army officers, who acted more importantly than the official diplomats of Germany accredited to Russia. Bismarck was much vexed by them.

In Japan the militarists follow the example of Germany in meddling in diplomacy. They are very active—more so than the official diplomats. The general staff diplomats spend more money than those in the foreign office. Lieut. Gen. S. Ooki and Maj. Gen. Banzai, both in China, have been for many years past more powerful as diplomats than the minister himself. Their reports submitted to Prince Yamagata influence him more than the reports of Minister Obata, the minister. That is why Japan's diplomacy is called militaristic.

Admiral Kato is mentioned as the most probable candidate for chief delegate. He is the representative of the navy. So the war department wanted Gen. Baron Tanaka appointed chief delegate, but his health prevents, and Maj. Gen. Banzai may go in his place. The object of sending militarists is that they often take an attitude of "Come, if you dare, with might." That leads other nations to misunderstand Japan. If proper men can not be found outside the military clique, Japan is a sorry country, indeed. We greatly regret that the military men have such influence on Japan that even the prime minister must cater to their whims.

[Yomiuri, 27 September. "Curb Army and Navy."]

The real reason why the militarists of Japan regard the continent of China as the objective for Japan's maintenance of the present Army strength lies in the relations of China to a possible Japanese-American war. China's support or neutrality will be a most important element in such a war. The militarists believe that Japan should bring a military pressure upon China to safeguard the line of supply of raw materials and foodstuffs. But if the militarists face America and China with that attitude Japan can never hope to maintain friendly relations with those two countries. They would rather unite against Japan. So long as the Japanese Army persists in maintaining the present status of the Army, the Navy (needing to protect the communication between China and Japan) will be unable to come to an agreement with the other powers in the matter of reduction. So it will be useless to participate in the Conference at Washington.

The Japanese people should address themselves to the most urgent task of curbing the autocracy of the army authorities in order to see that they are brought to reason to consult with the foreign, the finance, and other branches of the Government to decide the fundamental policy of national defense.

[Chugai Shogyo, 27 September.]

We thought America wanted to discuss the Pacific and Far East problems to arrive at a satisfactory limitation of armaments. Now it appears that armament limitation will only be a secondary topic. We warn America that if she adopts this attitude the conference will be a failure.

[Advertiser, 28 September, 1921.]

Nearly 100 advocates, including politicians, journalists, religious teachers, and business men met last night at the invitation of Mr. Yukio Ozaki to discuss disarmament. The meeting was presided over by Mr. S. Shimada and Mr. T. Shitachi. Never in the history of Japan has there been such a spirited meeting, a score of speakers from all callings speaking.

[Advertiser, 28 September, 1921.]

Due to the receipt of a threatening letter to Admiral Kato, the police have been watching carefully to guard the delegates from Koreans, Chinese, and Socialists.

The cabinet has appropriated 2,500,000 yen for expense of delegates.

[Advertiser, 28 September, 1921. "A New Zealand View."]

The success of the Conference depends primarily upon Japan. If she decides not to accept the place assigned her by the white races in the world's civilization, that almost necessarily means competitive

armaments. Every hope of approximating disarmament depends upon a frank interchange of views with her. The difficulty of reaching a basis for negotiations with her will in any case be formidable enough; an initial blunder would make them almost insuperable. It would be crass folly for America to deny that Japan has established for herself a special position in China. Regardless of the morality of her policy, it is consolidated beyond challenge, and no international conference can usefully dispute it. White New Zealand and white Australia must also be taken for granted. They will not be sacrificed or compromised, even for world peace. Japan must realize that issues arising out of the Versailles treaty are still open to review unless they have automatically settled themselves.

It must be recognized that Japan's attitude must be determined by what may fairly be called her "Military party." Democracy in Japan is only a veneer. All real power lies with the rulers of the Satsuma and Choshu clans, essentially military, aristocratic, and bureaucratic. Practically every responsible official is bound by marriage or feudal patronage or inherited loyalty to one or the other of these two clans, which since 1873 have controlled not only the army and navy but nearly every department of public service.

The clan system remains an integral part of the life of the nation, and accounts for the ease with which the general staff can override the foreign policy of the ostensibly responsible cabinet, and the employing class can perpetrate industrial conditions that would not be tolerated in any democratic country.

It is true that disintegrating influences are at work. Recent industrial disturbances indicate a coming storm.

In politics there is a distinct movement for a responsible government, but the family system is still the strongest moral and political force in Japan. Japan's policy is determined ultimately by a military class, but it is not necessarily aggressive. The statesmanship of Japan is sagacious enough to realize the risks of antagonizing the European powers and the United States. None realize better than the Japanese statesmen the risks of presenting an uncompromising attitude to such a conference as Mr. Harding has called. Japan is now deciding between arms and industry. If she foreswear her primitive impulse to seek conquests on the Asiatic Continent and to recognize that her immigrants are barred from New Zealand, Australia, Canada, and California, she is driven back to the necessity of supporting a large people on a small and comparatively poor country by industrial development.

[Hochi, 28 September, "Philippines Should Bide Their Time."]

The islands are a gateway to Oriental commerce and peace and a unique base in war if properly fortified. Their civilization is not

yet properly advanced, interisland communication is lacking, roads are bad, there are few railways, and the inhabitants are lacking in unity. America, which stands for humanity, must self-sacrificingly lead the Filipinos toward promised independence.

Gen. Wood possesses excellent political ability, so that his administration may contribute much to the future welfare of the people. They must be patient and self-respecting.

[Kokumin, 28 September, 1921.]

Admiral Kato's record in three ministries shows him to be without political principles. Premier Hara should go as chief delegate, or, failing him, Count Uchida (foreign minister).

It is said that Prince Yamagata has no confidence in Count Uchida, and so the premier lacks the courage to support Uchida. The prince should not exercise such great influence. The premier should not pay so much deference to the army and navy, but decide his policy upon reason. For the ministry, supported by an overwhelming majority in the Diet, to be catering to the whim of the bureaucrats and militarists is, indeed, a despicable thing to do—a shame at home and abroad.

[Yorodzu, 28 September, 1921. "Separate China from Armaments."]

America's proposal for the Conference is based altogether upon economic considerations, i. e., to cut down the national budget by agreement with other nations for armament limitation. This is a negative policy, but America has taken a forward policy regarding the solution of the question of China, intending to carry out a great work of reconstruction of that country. America insists upon putting together the question of armaments and the question of China. This proves America to have an ulterior motive.

[Osaka Mainichi, 28 September, 1921. "Japan Needs Internationalism."]

In Japan not only the people but also the statesmen, scholars, and business men are lacking in the quality of being international minded. This is due to Japan's hundreds of years of voluntary isolation. Even though Japan now stands as one of the three greatest naval powers, and spends 50 per cent of the budget for armaments, the people lack self-confidence. The necessity of standing alone increases the nationalistic idea developed by the Chinese and Russian wars. The nation is going in the opposite direction from internationalism, but the nationalistic idea and the international mind need not necessarily conflict. The peerless Japanese patriotism should be expanded to include a love of mankind and of peace and happiness for the whole world. Internationalism is really a most important nationalistic element. This point is a timely one to consider, now that a great international conference is being faced.

[Yomiuri, 29 September. "Kato's Election Opposed."]

The Conference has been a bad dream for our militarists. Most unwelcome to them. Even the American navalists don't enjoy it. The Hara ministry, so long as it accepted the invitation, should have appointed men outside the service.

In every way the appointment of the navy minister is unwise when Japan is considered rather excessively as militaristic. Perhaps an army man will be appointed fourth delegate to offset the navy minister. The rivalry between the army and navy is the fundamental evil of our national defense policy.

Prince Tokugawa's appointment is a matter of domestic politics. It is doubtful to what extent he and Baron Shidehara understand modern statesmanship.

[Chugai Shogyo, 28 September, "Tokugawa Praised."]

Although the ability of the Prince as a diplomat is not known his personality commands universal respect. He is a quiet man of serious mind, a nobleman, and president of the House of Peers. If an able working staff is appointed, all should be well.

[Yamato, 29 September, 1921.]

When America calls Japan a militaristic nation, the objective is the army. Why did not the army send a proper representative to explain the position of the army, and to appeal to the American people.

The appointments were apparently made with domestic politics more in mind than the aim of establishing Japan's interests abroad. The premier wishes to let the militarists, led by Prince Yamagata, take the responsibility he avoids himself.

[Hochi, 29 September, 1921.]

He is the first man in point of ability and experience among the titled nobilities. Twenty years president of the House of Peers, Prince Tokugawa will be expected to deal only with the general policy and obtain unity of services amongst the delegates.

[Advertiser, Sept. 29, 1921. "A Criticism of Premier Hara's Conditions of Permanent Peace," by Dr. Washio.]

Premier Hara's "Conditions of Permanent Peace" appeared in the Jiji and the Diplomatic Review, ascribed to Premier Hara, but evidently written by editor of Diplomatic Review.

The peace of the world requires as its essential conditions that no nation shall take a dominant attitude towards others; that the movement of commodities and raw materials, as well as the intercourse of peoples shall be free.

so that the livelihood of all men shall be secure; that there shall be no discriminatory treatment between races; that no nation shall be allowed to stand by its egoistic conception of justice and raise difficulties for others.

It is necessary for Japan to find an outlet for her surplus people and a source from which she can draw materials for her home industry; Mongolia and Manchuria have long been considered in this connection in both England and America. It has recently been spoken of in connection with the proposed plan for international control of China. The growing jealousy and distrust of Japan's motives have lately made the idea less popular.

While the assignment to Japan of this undeveloped territory would be a great relief to Japan, it would not solve the problem. Japan is not a colonizing people. They are not good pioneers and would be hopeless to compete with Chinese labor. If the Japanese Government would run the project at a loss, our future relations with China and Russia would have to be reckoned with, since this territory would become a colony of Japanese people; a wedge between the two big nations and a constant source of unrest. It has either to be driven in or pulled out.

The situation will easily lend itself to the militarists' ambition from which we are happily escaping.

The perpetuation of militaristic intrigue is to be avoided. Korea is a problem and Japan should not take on the policing of further territories and which must in the last resort be defended by Japan's own army.

To make Manchuria and Mongolia permanent Japanese settlements will not even temporarily solve the population question. It would be unwise for Japan to demand the open door of the whole world or to claim an exclusive field. Even with all the world closed against Japan, China is open for peaceful penetration by keen traders, alert enterprisers, technical experts, skillful mechanics, and professionals of all sorts, who will enjoy advantages of race and propinquity. This will solve the population question. For this method all that is needed is a defensive strength adequate to defy and frustrate any attempt to violate the principle of the open door and equal opportunity in the Orient, i. e., the principle of competition by merit.

It is doubtful, however, if Japan is equal to this new task. Internal corruption, lack of a sense of responsibility on the part of powerful business class, lack of energy and proper ambition of young men of Japan, rottenness of social system, sensual and sentimental literature, which is entirely lacking in creative genius.

[Chugai Shogyo, 1 October, 1921. "Disarmament in Second Place."]

The Washington Conference will be a Far East conference, with disarmament relegated to second place. Therefore, Japan and China

should come to an agreement beforehand and face the conference concertedly. China is less optimistic than at first about the conference. Since Chinese internal affairs are in confusion, international control may result.

[The Jiji, 1 October.]

The quality of teachers should be improved, their pay increased, and their dwelling houses bettered, and many other improvements are needed. We are opposed to the suggestion of reducing the expenses all along the line. The educational investigation committee should direct its attention to reduction of armament expenditures in order to obtain a fund needed.

[Osaka Asahi, October 1, "Reduce War Funds First."]

Is there any other country where statesmen attempt to force reduction of education expenditures without first readjusting general expenditures of the Army and Navy. Appropriations which are unproductive are made at the demand of the service men. For economy's sake the educational investigation committee—with the premier as chairman—and the minister of education propose to cut educational expenditures by 15,000,000 yen. Such a proposal is neglectful of the nation's welfare. Against public opinion, the Government dares to let the defense expenditures, amounting to 760,000,000 yen, stand as they are, not cutting them by one sen, and also in defiance of public opinion the Government dared to send an expedition to Siberia, and stationed troops in Saghalien, spending seven hundred or eight hundred million yen.

The Hara Ministry hates to give 15,000,000 yen for education. This is a serious matter for the country. There is no need of haste about the completion of the eight-and-eight program. The matter of schools and equipment should take the precedence. Public opinion should demand the curtailment of defense expenditures to save money for educational purposes.

[Yomiuri, 2 October. "Friction Between Services."]

At a recent meeting at the war minister's residence to discuss the attitude to be taken at the Washington Conference by the Army and Navy, only Army officers were present, so that there was no consultation between the two services. There is also a lack of unity between the Army and Navy general staffs. In 1915, when the Navy planned to build the eight-and-four fleet, the Army insisted upon an extension plan of its own. There were violent disputes between the Army and Navy as to whether the policy should be "guarding the north and advancing southward, or guard the south and advance northward, whether the Army be given precedence or the Navy."

There is to-day a council of national defense over which the prime minister presides. It consists of the foreign minister, the Army and Navy ministers, and the finance minister, and the chiefs of the Army and Navy general staffs. But it fails to secure unity of defense policy and unity between the civil and defense services, because the Army and Navy ministers would not abide by decisions of this council, but would appeal to the Emperor direct, joining hands for the time to fight against the civil government authorities. The council is under the authority of the prime minister only in name.

The general staff systems are in urgent need of reorganization. A national defense council should be established to secure the unity of different services in the interest of national defense.

The service men must sink their difficulties and sacrifice their pride to secure unity.

[Osaka Mainichi, 2 October.]

The attitude taken by the Japanese authorities toward reduction of armaments is a negative one. Such half-heartedness will half defeat the object of the Conference. The idea is to prevent naval-construction competition. But it will be more important to show an attitude of abandoning present plans of construction and of not objecting to great reduction if other powers decide to do so. A negative attitude is contrary to the spirit of the minister of the navy when he declared Japan will not necessarily adhere to the 8-and-8 program.

[Jiji, 4 October, 1921. "General Wood's Visit."]

Even though he has no official connection with the Conference, his position as Governor General of the Philippines will have a great influence upon the American policy of defense of the American territories in the Far East.

[Dr. Yamada, Professor at Tokyo Imperial University, in a speech before the National Policy Foundation Society.]

Any agreement on armament limitation will be without practical merit unless the wholesale dismantling of her forts in the Pacific is effected by America first. I also suggest the conclusion of agreements providing for equal opportunity and free trade and navigation throughout the Pacific.

[Niroku, 6 October, "American Ambitions"]

America has a great ambition for the capitalistic conquest of the Far East. Although the European nations are obliged to yield to America, Japan can not by any means do so. Japan can not agree to armament limitation unless her special position in the Orient is recognized, or the whole world thrown open to all races.

[Yorodzu, 6 October, "Those Haughty Americans."]

Are the Americans not lately become too haughty? On account of her being the creditor of the European nations, who suppliantly kneel before her, she has acquired a proud mind and must have the first place in everything. If she fell to-morrow, nothing worth while would remain of her so-called civilization.

[Yamato, 6 October, "Liberals and Militarists."]

Fair-minded foreigners consider that the liberalism and demand for democratic government in Japan to-day are nothing but fashions, such as have prevailed in ancient Greece. They also believe that the so-called Japanese liberals have been led astray by their fickleness. When the Japanese themselves call their country militaristic they indorse the misunderstandings of foreigners and thereby assist to break up the unity of the nation.

[Yomiuri, 7 October. "Limit Defenses."]

Involved in the question of limitation of armaments are the naval bases of operation for offensive movements of big fleets (including aircraft and submarines). Some limitation should be placed on the fortification of naval bases and forts. America has fortifications and naval ports in the Philippines, Hawaii, and Guam; Japan counterbalances these with the fortifications of the Bonins and Loochoo Islands—built recently for coast defense, and to meet the menace of the American defense works enumerated above. The rumor that America a few years ago tried to obtain a great naval base on the China coast (Hangchau Bay) was one of the causes of the 21 demands which Japan made on China. The possession of this bay by America on the China coast would have been a question of life and death for Japan, threatening her communications with China. Japan should conclude an undertaking with America in which Japan will guarantee the territorial integrity of the Philippines.

The Japanese naval authorities have declared that they are willing to discuss the question of fortifications in the Bonins and Loochoos if America will discuss those in Guam, Philippines, and Hawaii. America should, if necessary, be persuaded to discuss this matter.

[The Far East, October 1, 1921. "The Chief Object of the Conference—A Japanese View."]

The chief object of the Conference, it must be repeated, is the limitation of armaments. It is not confined to the limitation of the Navy or to the reduction of the number of battleships. To-day the United States, in order to make good stepping-stones to the Philippine Islands, is fortifying all her islands in the Pacific and is steadily

increasing in strength. She is thus encircling Japan and is menacing our southern frontier. Any military or naval bases or fortifications which threaten the peace of the Pacific must surely be taken note of and must be brought before the Conference and action must be taken to reduce them. Again, our Army, which is necessary first against the menace of China and then against that of Russia, and which was gradually enlarged and strengthened, has now become too large, and is consuming the energies of a large number of young men whose services may be otherwise used productively. This unwelcome situation of the Army, and the burden which the Navy imposes on the people, must in some way be removed by practical statesmen. Japan expects much from Admiral Kato.

JAPANESE NAVAL MANEUVERS.

Source: Reliable.

During the past 12 months a number of Japanese politicians, headed by Mr. Ozaki—who was recently expelled from the Nationalist Kensei-Kai party on account of his antinavy propaganda—have been waging a vigorous campaign for the reduction of expenditure on naval armaments. This movement is receiving so much popular support that the Imperial Government has found it expedient to enjoin strict economy in all departments of the navy.

In May last Admiral Baron Kato, the minister of marine, summoned all the senior officers of the fleets and naval stations to Tokio for a conference on this question. As a result of this meeting it has been decided to scrap many old ships, to reduce the number of ships in full commission, and to take such other measures as will curtail expenditure without reducing the fleet's readiness for war. This new policy has not been adopted a moment too soon, for even the docile Japanese masses are beginning to revolt against naval and military budgets, which between them absorb no less than 45 per cent of the entire revenue.

On the other hand the Government has refused point blank to modify the "eight eight" shipbuilding program, which is really responsible for the abnormal inflation of the navy estimates; nor is it willing to abandon the scheme of intensive sea training which has been in force since 1918.

THIS YEAR'S MANEUVERS.

This scheme is proving very costly, because it involves the maintenance in full commission of practically all serviceable ships, the consumption of huge quantities of fuel, stores, etc., and the holding

of grand maneuvers at least once a year. Hard on the heels of Admiral Kato's economy conference comes the news that this year's autumn maneuvers are being planned on an unusually large scale and will surpass in scope those of October, 1919, which were the most extensive peace exercises that the Japanese navy had ever carried out.

Before proceeding to describe the forthcoming maneuvers a few remarks on Japanese naval organization will not be out of place. At the present time no other navy in the world is keeping such a large proportion of its vessels in active commission. It is true that the ships of the United States Navy nominally on this footing make an imposing list, but it is common knowledge that many of them have reduced complements, and would not be available for some weeks, if not months, in case of emergency.

The Japanese system is very different. Thanks to an abundant supply of officers and men and a very large body of reserves, no difficulty is experienced in finding complete crews for every ship that retains a fraction of fighting value. On May 1, 1921, there were approximately 3,900 line officers, including engineers, who do not, strictly speaking, enjoy "line" status in the Japanese Navy. This figure is only about 1,200 less than that of the United States Navy, which has nearly three times as many ships to man. The disparity is greater in the case of enlisted men, of whom Japan now has 75,000, and is budgeting for 80,000 two years hence. In short, she has enough trained officers and men to furnish a full-size war crew to every battle-worthy ship she possesses, with a margin over to provide complements for every new vessel as it leaves the building yard. As for reservists, she has 41,000 officers and men in the first-line reserve, all of whom have to put in a minimum of 100 days of training in the navy during the seven years they remain in that category.

Observers have often been puzzled by the fact that Japan keeps on her navy list a number of old ships which have practically no fighting value left and in any other country would be deemed ripe for the junk heap. The explanation is simple; these obsolete craft are needed as training schools for the men who are later to take over the superdreadnaughts, high-speed cruisers, destroyers, and submarines which will reinforce the fleet in due course. If they were scrapped, thousands of officers and men would have to do their training ashore, and the Japanese hold that the sailor should learn his job afloat.

This year's maneuvers are to begin early in September and continue to the end of that month. The principal maneuver zone will be the Japan Sea, but certain of the operations will extend to the open waters of the Pacific. Ever since Rodjestvensky's armada was

annihilated at Tsushima in 1905 the Sea of Japan has been a Nipponese preserve in fact no less than in name. Japanese supremacy in that area is unchallenged and unchallengeable, for each of the narrow straits giving access from the Pacific is under her control and so heavily fortified that none may pass without her warrant. A glance at the map reveals the important bearing which this strategic control of the Sea of Japan exercises on Japanese policy on the mainland. With her flank thus secured Japan need fear no serious opposition to her aims in China or Siberia. The development of submarines, aircraft, torpedoes, and mines has strengthened her hold on the Sea of Japan by rendering the approaches virtually impregnable to attack.

The leading rôle in the maneuvers has been assigned to the first and second fleets, based respectively on Yokosuka and Kure, but the third fleet, with its headquarters at Sasebo, will also take part in the program. Excluding minor craft and auxiliaries, upward of 40 large ships will participate, besides several destroyer and submarine flotillas and airplane squadrons. Twelve of these ships will be dreadnaughts and battle cruisers, the remainder comprising older armored ships and scout cruisers.

The first fleet is headed by the *Nagato*, which, with her displacement of 33,800 tons and main battery of eight 16-inch guns, is for the time being the largest battleship in the world. She is more than 1,000 tons heavier than the United States steamship *Colorado*, similarly armed, and was put into commission last January as flagship of Admiral Tochinai, commanding the first fleet. A sister ship, the *Mutsu*, now completing at Yokosuka, is expected to begin her trials shortly, but it is improbable that she will be ready in time for the maneuvers. Other battleships in the first fleet are the *Ise*, *Hiuga*, *Yamashiro*, and *Fuso*, which correspond in size and power to the United States steamship *New Mexico* class, and the older dreadnaught *Settsu*, armed with 12-inch guns. This latter ship will be transferred to the third fleet when the *Mutsu* joins up. The six battleships are organized into divisions, each under a flag officer.

Attached to the first fleet is a squadron of fast light cruisers—*Kuma*, *Tama*, *Oh-i*, and *Kitaami*—all of 5,500 tons, a speed of 33 knots, and a heavy armament of rapid-fire guns. These are among the fastest cruisers afloat, and at least four others are under construction. In addition, Japan has begun or authorized 13 scout cruisers of a larger and more powerful type, some of which are expected to mount 8-inch guns. The first fleet is accompanied by two destroyer flotillas, with a total of 20 boats, none more than five years old, and one flotilla of submarines numbering 8 large boats. There is also the aircraft carrier *Wakamiya*, a converted transport, which is serving as a seaplane mother ship pending the

completion of the *Hosho*, a large fast vessel specially designed for this work.

The second fleet, based at Kure, is organized on similar lines, but is a faster and more mobile force. Its leading ships are the four sister battle cruisers, *Kongo*, *Ki-Yei*, *Haruna*, and *Kirshima*, built in 1913–1915. Although not of the latest type, these are still very formidable ships, displacing 27,500 tons and capable of steaming at 27½ knots. Their main battery is eight14-inch guns. The Japanese regard these vessels as the most important units of the fleet, because they are the only battle cruisers in the Pacific, and in that respect will remain unique till the U. S. S. *Constellation* and her sisters come into service two or three years hence. Working with the second-fleet battle cruisers are the fast scouts *Tatsuta* and *Tenryu*, of 32 knots speed, and *Hirado* and *Yahagi*, of 27 knots. The second fleet has its proper complement of destroyers, viz, 16 first and second class boats and a submarine flotilla, but no aircraft carrier. Several of the larger ships, however, carry small single-seater scouting planes on platforms over the turrets.

The third fleet, which is to take part in the closing stage of the maneuvers, is numerically the largest formation. Among its armored ships are the "semidreadnaughts" *Aki* and *Satsuma;* the *Katori* and *Kashima*, which were detailed to convey the crown prince to Europe; the big armored cruisers, *Kurama*, *Ibuki*, and *Ikoma;* and three older battleships. The only modern scouts in this fleet are the *Chikuma* and *Tone*, and its torpedo craft and submarines are older than those attached to the first and second fleets. In case of war the third fleet would be held in reserve as a coast-defense force, though some of its best ships probably would be promoted to the first line.

COAST-DEFENSE FLEET.

On the eve of the maneuvers the first and second fleets will rendezvous at Saiki Bay, in the Bungo Strait, between the islands of Kyusha and Shikoku. Here Admiral Tochinai will assume command of the whole force and take it to sea for a week of strenuous drill. The program for this opening week includes high-speed steam trials, tactical exercises, gunnery practice, and destroyer and submarine attacks.

The second phase will begin on or about September 12, when the force will be split into two fleets—one, the strongest, representing the battle fleet, and the other an "enemy force" bent on breaking its way into the Sea of Japan through the Chosen and Tsushima Straits, between Japan and Korea. During this stage of the maneuvers an officer of the naval staff will be present on board each flagship, while

Admiral Shimamura, chief of the naval staff, may also embark on Admiral Tochinai's flagship to watch the proceedings.

It goes without saying that details of the problems of strategy and tactics to be worked out on this occasion are shrouded in secrecy, but the fleet movements already announced help to indicate the main idea, which is to determine whether the Japanese Navy is competent to perform the dual function of guarding the eastern (Pacific) coast from attack and simultaneously holding the approaches to the Sea of Japan against enemy invaders. Chosen and Tsushima Straits are to be heavily patroled, for attempts will be made by submarines of the "enemy" fleet to slip through the cordon and work havoc among shipping in the Sea of Japan. Midway in the straits stand the islands of Tsushima and Iki, both of which are fortified; but on either side is a channel from 30 to 40 miles wide which it would be difficult to render submarine proof, especially as the depth of water is considerable.

In the event of war with a power owning large submarines Japan would therefore be faced with much the same problem that confronted the British at Dover in the Great War. Considering that it took four years of work to make the narrow strait between Dover and Calais inaccessible to German U-boats, the Japanese could scarcely hope to keep enemy submarines from using the wider Tsushima Channel, though the presence of such craft in the Sea of Japan would be highly embarrassing to Japanese communications with the mainland.

If the precedent of 1918 and 1920 is followed the maneuvers will culminate in a great action between the contending fleets and a lavish expenditure of blank cartridge. Last year, especially, there was a tremendous amount of firing, and photos taken on that occasion show the battle cruisers rushing into action at full speed and firing eight-gun salvos from their main batteries. It was during a similar sham battle in October, 1919, that the superdreadnaught *Hiuga* had one of her 14-inch turrets blown up by a flareback, which set fire to bags of powder. The turret was hurled bodily overboard and nearly 50 casualties were caused.

At the close of the maneuvers the results are sifted and analyzed by a commission of admirals and staff officers, who award praise and censure in accordance with their findings. The work of this commission is thoroughly businesslike, and its judgments are in no way influenced by personal considerations. Efficiency is the sole standard by which officers are measured, whether their rank be high or low. The Emperor of Japan never meddles with technical matters. In this he is unlike the ex-German Kaiser, who, although innocent of practical knowledge, never hesitated to pronounce final judgment on the most complex problems of sea strategy.

MANEUVERS BREAK OFFICERS.

Maneuver time is an anxious period for the fleet and squadron commanders of the Japanese Navy, whose prospects of promotion depend very largely on the verdict passed on their conduct during these exercises. More than one officer holding high command at sea has found himself politely relegated to an obscure shore billet on account of an error of judgment which he committed at maneuvers. On the other hand, there have been equally numerous cases of junior officers receiving sudden promotion as a reward for conspicuously good work. Promotion in the Japanese service is by selection, not by seniority, and this system is so consistently exercised that the average age of admirals and captains is lower than that of any other navy. Japanese officers still on the right side of 40 are found in command of the latest superdreadnaughts, and until recently the second fleet was commanded by a vice admiral aged only 48.

When summing up the lessons of the Russo-Japanese War, Count Okuma, the veteran statesman and thinker, wrote: "Our victories at sea must be attributed in large measure to the youthfulness of our naval officers. Modern naval warfare is too strenuous a game for graybeards. Youth alone possesses the zeal, the initiative, the enterprise, the readiness to assume responsibility which are qualities of overwhelming importance in the naval officer. Our destroyer captains were on an average 10 years younger than their Russian confrères, and much the same ratio obtained in other commands. The world saw the result. On one side the restless, very enthusiasm of youth, with its iron will to conquer; on the other the sloth and disillusionment of middle age, aversion to activity, and the pessimism that meets defeat halfway. If we are wise, we shall make the Imperial Navy of to-morrow a young man's service. Let the old men stay at home to plot and plan, if you like, but give the ships to the young men. That is the secret of victory."

ENTIRE FORCE OF AIRPLANES.

Practically the whole of the aviation resources of the Japanese Navy are to be mobilized for the coming maneuvers. The flying corps at Yokosuka, Kure, and Sasebo are expected to send a total of 80 machines, many of which will be employed in patrolling the Tsushima Strait and in antisubmarine duties.

Last year the navy machines carried out a series of attacks on the coast towns; as much, perhaps, to impress public opinion as for any other purpose. Be this as it may, the sight of big squadrons of bombing machines swooping down on the great seaports and dropping scores of india rubber "bombs" on the most densely populated quarters was not without effect. It produced a loud outcry in the

press for the immediate expansion of the flying service, and there is every reason to believe that the Government is shortly to introduce a big program of aviation both for the navy and the army.

Nor was this the only direction in which former naval maneuvers have subserved the purposes of propaganda. Prior to 1919 the Imperial Diet had resisted the Government's proposals for modernizing the fortifications along the coast. In that year, however, the maneuvers were held in the vicinity of Sagami Bay, south of Tokyo, and the official report stated that the coast defenses had proved to be too weak to resist the approach of the "enemy" fleet.

"In these circumstances," it added, "the safety of the capital itself, to say nothing of that of other large cities on the seaboard, can not be guaranteed unless the outlying forts are reconstructed and rearmed with modern artillery."

The hint was not wasted. Money was speedily voted for improving the coast defenses and the work has gone on so rapidly that the inhabitants of Kobe and Osaka now complain of the noise and concussion produced by the firing of the new forts.

The approaches to Tokyo Bay, including the islands to the south of that point, have also been armed with high-powered ordnance. By degrees the whole of the Japanese coast defense will be reorganized on the latest principles. The work will cost a huge sum, but apparently a few millions more or less make very little difference in view of the formidable total which Japanese expenditure on armaments has already reached.

JAPANESE NAVAL VESSELS TO BE COMPLETED OR LAUNCHED BY END OF 1921.

Source: Reliable.

The following list of Japanese naval vessels gives ships to be completed or launched by the end of 1921:

Dreadnaughts.

Mutsu, 33,800 tons, built at Yokosuka Navy Yard. Laid down June, 1918; launched, May 31, 1920. Will be completed before the end of 1921.

Kaga, 39,900 tons, building at Kawasaki. Laid down July, 1920; will be launched November 17, 1921.

Tosa, 39,900 tons, building at Mitsubishi, Nagasaki. Laid down February, 1920. Should be launched before end of 1921.

Light cruisers, 5,500 tons.

Nagara; built at Sasebo Navy Yard. Laid down about August 1, 1920. Launched, April 25, 1921. To be completed at end of 1921.

Oi; building at Kawasaki. Laid down, November, 1919; launched, July 5, 1920. Completed, October 3, 1921 (delayed to replace turbines).

Isuzu; laid down at Uraga about October 1, 1920. To be launched October 20, 1921.

Destroyers, 1st class, 1,345 tons.

Yukaze; laid down at Mitsubishi, Nagasaki, December, 1920. Launched, May 28, 1921. Completed, August 25, 1921.

Shiokaze; laid down at Maizuru Naval Station, 1920. Launched November 13, 1920. Completed, August 5, 1921.

Nadakaze; laid down at Maizuru Naval Station about October, 1919. Launched June 26, 1920. Will be completed before the end of 1921.

Nokaze, launched October 1, 1921.

Tachikaze; laid down at Maizuru July, 1920. Launched March 30, 1921. Will be completed before end of 1921.

Hokaze; laid down at Maizuru November 30, 1920. Launched July 12, 1921. Will be completed before end of 1921.

Destroyers, 2d class, 850 tons.

Warabi; laid down at Fujinagata about October, 1920. Launched September 28, 1921.

Sumiri; laid down at Ishikawajima November, 1920. Will be launched October 17, 1921.

Hishi; laid down at Uraga about November 15, 1920. Launched May 30, 1921. Will be completed before end of 1921.

Ashi; laid down at Kawasaki October 20, 1920. Launched September 3, 1921. Will be completed before end of 1921.

Tsuta; laid down at Kawasaki about November, 1920. Launched May 9, 1921. Was completed and in commission prior to July 12, 1921.

Submarines.

No. 29, $\frac{890}{1,070}$ tons, launched February 10, 1921, and *No. 30*, $\frac{890}{1,070}$ tons, launched May 11, 1921. (Both building at Mitsubishi Kobe.)

No. 31, $\frac{700}{870}$ tons, launched March, 1921; *No. 32*, $\frac{700}{870}$ tons, launched June 22, 1921; and *No. 33*, $\frac{700}{870}$ tons, launched July, 1921. (All three building at Kawasaki.)

Nos. 38 and *39*, $\frac{890}{1,070}$ tons, launched at Kokosuka October 26, 1921, and *Nos. 42* and *43*, both $\frac{890}{1,070}$ tons, building at Sasebo will be all completed before end of 1921.

Nos. 42 and *43* were launched early in 1920, and should have been completed a year ago, but have been delayed for some unknown reason.

Gunboat.

Yakoso; laid down early part of 1921. Will be launched October 20, 1921. (Building at Yokohama dockyard instead of Kure, as previously reported.)

Airplane carrier.

Hosho, 9,500 tons: laid down at Asano shipyard December 16, 1920. Will be launched October 24, 1921.

Tankers.

Tsurumi, 15,400 tons; laid down at Osaka Iron Works March 10, 1921. Launched September 29, 1921.

Shiriya, 15,400 tons; laid down at Yokohama dockyard August 19, 1921. Launched September 14, 1921.

BARR AND STROUD RANGE FINDERS BEING MANUFACTURED BY BRITISH, APPARENTLY, FOR JAPANESE.

Source: Reliable.

(13092–A.)

31 August, 1921.

The range finder ordered by the department is at least three jumps behind the modern ones at the factory. The newest naval antiaircraft rangefinder is not a vertical one, but is similar to the range finders in the Army use—of horizontal position. This concern is working on a new one for naval use of that type, and while it is almost completed they have no pamphlets descriptive thereof. There is also just completed a new stereoscopic antiaircraft range finder with compensation for the roll of the ship and various new improvements on the one ordered by the United States Navy.

It is the opinion of the expert that every battleship should have not only coincidence range finders but also at least two stereoscopic range finders. The former are more dependable, but the latter are most valuable in hazy weather. This concern is making many tests of these two types and has a complete set of photos of various weather conditions and hopes to establish the point where the stereoscopic range finder will be better than the coincidence range finder.

Mr. French, an assistant manager of the plant, is of the opinion that the reason the German fleet at Jutland lost the range so completely was not because their instruments went bad, but because their men became unnerved to the extent of losing the balance and cool-

ness necessary to use the stereoscopic range finder. The Germans had only these. The coincidence type does not require the knack and nerve quality to be used successfully.

I was further assured that the Japanese are keeping this plant practically running in peace-time force. I observed many range finders and periscopes with Japanese chirography on name plates and instruction plates. Also there were a great many of these plates being etched for other instruments. I was informed the Japanese are installing only Barr and Stroud instruments. Mr. French had been in Germany shortly after the armistice and remained there for the British Government inspecting naval bases, and so forth, and he assured me the general idea in Germany was *that there would be a war between the United States and Japan*, which event would be the salvation of Germany. He believed they were fostering the idea at the present moment.

I was shown the 100-foot range finder for coast-defense shore guns and told this would be installed on the southwest coast of England at an early date.

My general impression was that this plant would bear an intelligent inspection by an expert, and that the article ordered by us was not of the last type or up to the latest in the line of improvement. There were also being made experiments on a periscope that was also a range finder. This was not fully explained to me, but I took occasion to look through this instrument and saw that it was in excellent working order. It was installed outside and there seemed to be great activity thereabout.

Either there is a great deal of stuff ordered by the Japanese from this concern or else the "stage was set" to so impress any American inspector.

LIMITATION OF ARMAMENTS—FRENCH ATTITUDE.

Source: Reliable.

(14811–A.)

2 October, 1921.

The Allies' Debts.

The following article taken from the Journal des Debats, of October 2, 1921, bearing on the Conference of Washington, would seem to have been inspired. The author's name is not given.

"Our American confrères think it necessary to put us on our guard against the campaign which is at this time directed, in certain business centers of New York, in favor of the annulment of the debts of the Allies by the American Government.

"We already know that this campaign has been badly welcomed in political and official circles of Washington. And it appears very im-

probable that President Harding would authorize, as Mr. Winston Churchill asked of him this week at Dundee, the discussion of the allied indebtedness at the coming Conference.

"We can not too much insist on the lack of favor which a similar discussion would encounter in the great American public and on the total lack of "international esprit" which has not ceased to be manifest since the advent of the new régime.

"There are assuredly numerous American business men who recognize that the European credit of ten thousand millions of dollars can not count to-day as assets in favor of the United States, because any effort of the indebted nations—formerly the best clients of the American market—with a view to liberate themselves must weaken them financially and commercially, hence to reinforce the barrier of the exchange and progressively arrest commerce, industry, and American economic life. However, the American people can not see things in this light. It rests persuaded that borrowing Europe must settle its loans. It sees in this adjustment the only means of lowering its own taxes. It appears, therefore, quite improbable that the Government consents to engage itself in a line of action in which it can only weaken itself vis-à-vis opinion, and at the moment it seeks the more to consolidate itself."

LIMITATION OF ARMAMENTS, GERMAN COMMENT.

Source: Press. (Allgemeine Deutsche Zeitung.

(14855–A.)

27 September, 1921.

The following report is a translation of an editorial article in the above-mentioned newspaper, commenting on Churchill's recent speech in Dundee, and its connection with Germany and the forthcoming Conference in Washington:

Winston Churchill has recently spoken to his constituents in Dundee. As far as may be judged from the accounts of the speech before us, Churchill's remarks express the basic points of the British politics. Even though one knows that Churchill largely follows an independent course, his comments in Dundee undoubtedly express the viewpoint of the entire cabinet, namely, that of Lloyd George. The individual points of the speech of the British colonial minister are as little new as the warnings of a Keynes. From the German side, it has been noted more than once that not only Europe but also the entire world, is indissolubly bound together economically, and that the well-being of France is closely bound together with the sustaining of a healthy Germany, even as well as the well-being of England. This point of view recently found expression in the interview granted by Gen. Ludendorff to a reporter of the Matin. In France, these self-evident facts were immediately contested, first because they were expressed by Gen. Ludendorff, and then because the French view the solidarity of

Europe as the greatest danger to their own hegemony. The leading personalities on the Seine would powerfully restrain the development of the entire continent. The French bayonets shall dictate peace to the European continent. Germany lying flat on the ground, an impoverished Austria, and a chain of vassal States such as Belgium, Luxemburg, Tschecho-Slovakia, or Poland, to which Paris would add the Baltic border States, Rumania, and if possible, Jugo-Slavia, all are destined to form the pathway for France's desire for rule and dictation.

The anger of the French will now pour forth against Churchill even as it did against Lloyd George. The colonial minister expressed clearly and distinctly that England could not consider showing partiality to Germany at the expense of France, such as certain prejudiced voices in Paris accuse her of doing. London's duty can only be that of a leveler. The readiness and willingness therefore is already present in the German people, and it will not be Germany's fault if the work is not taken up. For the treatment of every individual question since the treaty of Versailles shows that France is aspiring, not for understanding and agreement, but for the weakening of Germany. English and American commentators (Senator Borah's words in regard to the extent of France's military equipment have left an unpleasant impression in France) are reminded of France's endangered security from the side of Germany, and she demands protection through an alliance with Washington and London which is contrary to the practical tendencies of the Anglo-Saxons. The Anglo-Saxons desire to get out of the turmoil of war times. France desires to carry on the war through other means in conformity with Clemenceau's well-known expression. Herein lies the kern of the misunderstandings between the French and the English. But it is due to Lloyd George that it has come to this point. He had the right idea that peace must bring rest and stability to Europe. But Lloyd George gave in before Clemenceau. He would not grant France the Rhine frontier, nevertheless he became party to a treaty of peace, the impossibility of which is apparent to every clear-thinking person. Even the French, who pride themselves on the sharpness of their Latin perceptions, know perfectly well that the much-lauded treaty of Versailles can not be fulfilled. But they recognize in it the given tool by which they may carry out their policy of conquest which they were unable to put through in the winter of 1919. French politics have acted in conformity with this principle, and they have succeeded in setting aside British opposition not only in Spa but also in the settlement of the various reparations problems.

As far as Upper Silesia is concerned, France is preparing the same tactics by means of a postponement of a definite decision, and it also does not lose sight of the question of the occupation of the Ruhr.

Churchill actively recommends the creation of an international economic agreement. He is quite right in seeing in this the only means of arresting the ruin and downfall which is threatening everywhere in the not too distant future. The British minister looks to the United States for the only help. He very cleverly refers to the business difficulties of the world's greatest creditor. He intends in this way to render the thought palatable to the Americans of relinquishing a part, at least, of the indebtedness due them. That Germany is destined to the burden of phantastic reparation demands and the costs of occupation, and thereby to a slow economic disintegration, has often enough been discussed. Even if the bolshevistic propaganda the activity of which, for instance in the eastern countries affecting England's interests, has been the subject of a long complaint on the part of Lord Curzon to the soviets is gaining ground, then this is actually due to the existing economic insecurity and necessity. The people can only escape from this when they cooperate and work together to bring about healthy principles for the reconstruction. And for

this, it is necessary to bring the disturbing ambitious elements, such as France, to their senses. Up to now England has not had the courage to arrest the imperialists of Paris. Churchill looks about for helpers. He makes advances to Italy, and turns to America and Japan in order to secure their help in restoring peace. The threatening rivalry between Tokio and Washington, which can endanger the entire British Empire, is indeed the greatest care on the horizon of the British. Great Britain wishes to retain her entire fleet, but to shut out the competition between America and Japan not only causes new frictions but also obliges England to prepare likewise in a military way.

For this reason Churchill's speech forms the most important lead for the Conference at Washington, at which England will endeavor not only to decrease the tension in the Pacific Ocean but to induce America to cast her entire political and economic weight in the scales to bring pressure to bear upon France. President Harding therefore puts himself in the position of bearing a great responsibility, but it is America's duty to rectify the errors brought about by President Wilson, not only to Europe, but also on the German people, who, trusting to his integrity, laid down their weapons. In Paris, however, the arts of diplomacy and politics will get to work to persuade the Americans that in reality France is not striving for hegemony and power, but is harmlessly striving for her own recovery.

LIMITATION OF ARMAMENTS, GERMAN COMMENT.

Source: German Press. ("Allgemeine Deutsche Zeitung.")

(14855–A.)

27 September, 1921.

The following report is a translation of an editorial article in the above-mentioned newspaper treating of the forthcoming conference in Washington, its aims and possibilities, etc.:

There is no doubt in any quarter but that the Washington Conference can have a gigantic significance for the future. If the negotiations carried on by the Pacific interests bring forth results that are not only purely decorative and merely set aside the present differences temporarily, but rather bring forth results that will stabilize the world politics and international economics for a long time to come, then the Conference can prove the starting point of an epoch of reconstruction for the peoples of the earth who have been fundamentally shattered by the World War. Even we have an interest in the results of the Conference, for although we are no longer a great power, nevertheless we are and will remain a potential factor which can not be shut out of consideration in international economics.

All the questions to be discussed at the Conference are not yet fully established. Also, the final aims of the participants in the Conference are not sharply defined and clearly recognizable. And even less can one prophesy if the participants will be successful in separating the principal questions from the great mass of problems and at least arrive at some basic agreement in connection with these. Even in the different countries taking part in the Conference there exists a diversity of views as to what is to be striven for, attained, and even sacrificed by the individual participants. The three principal naval powers seem to be united in the desire to limit opposing economic interests in such a way as to remove all possibilities of armed conflicts and thereby lighten the burden of naval armament.

If they succeed in limiting the contest in naval armament and thereby create a relative political rest in the world, then it is also to be hoped that the universal silent pressure of the naval power of the peace-loving peoples will not only have an effect on France, which is keeping Europe as well as all the world in a state of unrest, but will also show her that her aims, inherited from the time of Louis XIV and Napoleon I, toward achieving a European "preponderance legitime" will be felt as a source of trouble by the entire world. The word spoken by Prime Minister Briand on July 11, 1921,, "Who can oppose France in the military position which she has? Who? No one," is not only directed against the defenseless Germany, ready for the sacrifices imposed by treaties, but is rather a summons to the whole world—a challenge—which will develop into intolerability in time, in view of the aims pursued by the Washington Conference. Not long ago in the Temps, M. Tardieu expressed himself as follows: "Even if Germany fulfills all obligations imposed upon her, France is not obliged to evacuate the left bank of the Rhine after 15 years if a guarantee treaty has not been previously signed with America and England." With this the new constructive politics in Washington are previously established in a partial way. In view of France's aspirations briefly sketched here and widely disseminated, it is well not to lay too great hopes on the Washington Conference. The Times recently reported from a reliable source that it was not in accordance with Mr. Harding's ideas to view the Conference in the light of a starting point for an "association of nations" which he once recommended as a substitute for the "League of Victors." In spite of the criticisms directed against him at home on this account, it is much more Mr. Harding's view that enough will be attained if the economic questions of the Pacific problem are cleared up and the maritime tension relaxed. To-day it is not "sentiments" which are the decisive factor in the disarmament measures of the peoples, but a real and actual economic consideration.

When Lloyd George expressed on August 18 that which which a great many English hope with him, "If our alliance with Japan can evolve into a certain agreement with Japan and the United States, then that would be a great event." and further, "I am full of hope still that such an agreement, a partnership will come about as a result of the Conference," then the re-echo which these words have found in America show very clearly that official American circles do not consider a formal alliance of this kind as possible. The New York Evening Post writes quite unequivocally: "The United States is more than ever against entangling alliances, such as the English-Japanese pact is and such as the proposed three-sided alliance would be."

The September copy of the Fortnightly Review contains a notable article by Holford Knight which pictures especially the renunciatory sacrifice which he thinks England must make in order to help the Conference to real results. The principal point for America is Wilson's demand for "freedom of the seas." England must grasp the fact that America will not permanently relinquish this point. Actual "freedom of the seas" is the placing under international control of all the ocean highways and the lasting renunciation of England's priority rights and also of the right of capture. That is the real and underlying idea of the Washington Conference. The author of the article asks: "Are we English ready to renounce our traditional supremancy on the sea and also renounce rights that touch our pride? *We must do it. For without this there can be no prevention of a contest of armament and the peace of the world will remain endangered.*"

In another English magazine, the September copy of the Nineteenth Century, the well-known naval writer, John Leyland, discusses the Washington Conference and shows almost affectionate consideration for Japan, and con-

cedes decisively that her requirements for expansion towards northern China and Siberia must be acknowledged. He warns against too enthusiastic hopes and designated as questions which must remain outside of the discussions—the Monroe Doctrine, the inviolability of Australia and New Zealand with reference to colored immigration, and Canada's special interests. He says further: There can be no doubt that we English need "power" if we are going to exert any influence on the Conference. The backbone of the British Empire is the fleet. England has already shown that she is ready for naval armament. America and Japan have, however, in the mentime, built "post-Jutland ships." It was quite right that we also should build four new ships as substitutes for the old. And this decision has already strengthened our position in Washington. With characteristic English mental processes, Mr. Leyland then occupies himself with observations as to the future size of fleets, whereby he, as all the English, pass by purposely without comment that the contemplated American and Japanese naval budgets for 1925 or 1927 could be easily overtaken by the intellectually well-equipped England. "The conditio sine qua non" for him, in the first place is a certain consideration for Japan's justifiable expansion and commercial interests. In the second place, he sees the difficulties of the Conference's problems as lying in the just limitation of the divergent commercial and economic necessities of the participants. They were the real reason of the World War which the impossible treaty of Versailles has ended. Japan dare not endanger her future in the Pacific from the instinct of self-preservation, in view of the American armament and equipment and naval bases. In the last analysis the keynote of the whole thing is the limitation of naval armament between Japan and the United States. It is impossible that everything would go off smoothly at the Conference, but one may hope for an "agreement." It is England's duty to enter the lists as intermediary. "We must appear there as the friend of the United States and as the ally of Japan. Friendship and alliance must both be held intact."

If Harding succeeds in solving the difficult problem of a triple alliance (in so far as the Monroe Doctrine permits this), then the naval disarmament can begin immediately.

The Japanese viewpoint of watchful waiting, ready for disarmament concessions under similar concessions from the others, is well known. Over there one watches the coming events with a little unrest. Only the negotiations at the Conference itself can establish in how far Japan's economic interests can be justly limited to the satisfaction of the other powers. Old and new ideas seem to be struggling in Japan in view of the new politics of the future. Up to a certain point, even the old Samurai pride is inclined to make certain concessions to the hard demands of the present situation.

France's wishes do not seem to bespeak a practical union of the three naval powers nor an actual agreement in regard to economic and armament questions. Recently the Matin and Temps have occupied themselves a remarkable amount with the theme, "Is France's decline at sea unavoidable?" and this with unequivocal anti-British tendencies. By the continuation of the American-British-Japanese rivalry at sea, in which presumably England and Japan will cooperate further on account of the existing alliance, the French politics hope further to form the little tongue on the scales of international politics, and to be able to continue to play its rôle as ally of both parties. The warmly recommended construction of a modern aerial and submarine fleet in France will help it do this in connection with its favorable geographical position. An article in the Monituer de la flotte, of June 25, 1921, went so far as to prophesy a conflict between England and America within four years. In this event, France's neutrality must be an active one. If England should be victorious,

then France would remain forever in its rôle of naval power of the second or third rank. If the United States should be successful, then new future possibilities would open up for France. The following conclusions were then drawn: The necessity of drawing up a new French naval program.

In the interest of the world and in our own interest it is to be hoped that the French viewpoint, supported by an active propaganda in North and South America, will not materialize. The French hopes for an Anglo-Saxon conflict, which are shouted forth so loudly, will also furnish food for thought to the participants at the Washington Conference, who are not yet fully prepared as to an agreement. Neither we, nor Europe—so badly in need of rest and quiet—nor the world itself, have anything to hope from an armed conflict between the Anglo-Saxons. This signifies the end of culture and the absolute destruction of international economics. At the time of Louis XIV, France's craving for expansion was Europe's danger; to-day it is the world's danger. Even the continuation of a tension between America, England, and Japan, without coming to an armed conflict, would be exhausting for the world and its general economical health. This would divert England from her European tasks, which also touch us very closely, and would occupy English powers outside of Europe, which in other cases would serve to dam the French lust for glory and the destructive passion for expansion. American help in this sense can not be counted on.

The following report is a translation of an excerpt from an editorial article appearing in the Frankfurter Zeitung newspaper commenting on Churchill's recent speech in Dundee and certain phases of the forthcoming Conference in Washington:

The American correspondent of the London Times recently reported that it was the idea of a number of important American financial men to propose the settlement on the part of the forthcoming Conference of the existing international indebtedness. This report was promptly denied officially by America. The Washington Conference fears to extend the program of work. This reticence is quite comprehensible, for the wider the scope the greater the fear that the delegates will lose themselves entirely. But there are other motives actuating the leading personalities in America when they do not desire to bring up the question of the international debt before the Conference. These grounds are of an inner political nature. The sympathies in America for the cancellation or diminution of the foreign indebtedness to America are not yet ripe. They do not recognize how greatly their own economic problems, such as the labor question and the problem of the unemployed, are influenced by this very point. And then they say, "Shall we cancel England's indebtedness to us, only to put her in the position of building more dreadnoughts to compete against us?" There is an inner relationship here between the program of the Washington Conference and that which all the discerning people in the world, like Churchill, are striving for. The diminution of the mutual indebtedness of the European States can only be considered when America, the world's greatest creditor, is ready to act reciprocally toward her European debtors.

America will never consider doing this just so long as the spirit of rivalry and competition exists. We do not know whether Churchill, who has been British minister alike for the navy and the army, had this in mind when he appealed to all discerning Americans in the course of his speech in Dundee. But it is nevertheless to be hoped that the British politics which desire to bring about economic alleviations for themselves and the entire world will clearly recognize this relationship.

As to the general opinion in Germany regarding the Japanese policy in China and the Orient, one opinion is that Japan *will endeavor to conciliate China in small matters and in this way* prevent the United States from acquiring a foothold in Asia and the Far East. It is also believed that England is outwardly supporting the Japanese policy in China, in view of the menace of the spread of the "Asia for the Asiatics" movement, but that this support is not wholehearted. In the forthcoming Conference in Washington Japan's probable course will be one of conciliation towards China, as already stated, and the discussions of the far eastern policy or the limitations of armament will be presumably colored or inspired by this attitude. It is not thought in Germany that a small paper percentage in favor of the American fleet will impair Japan's real power, inasmuch as she has only one ocean to fight for. It is also not considered that Japan can obtain very much support from England in the open, on account of France's orientation in the direction of the United States in order to be allowed to retain her big army for coercion purposes against Germany. However, Great Britain would not care much if she could only swing Russia into an alignment with Great Britain, Germany, and Japan. In face of a *Russian-United States* combination, *Great Britain will drop Japan*, but not otherwise, for *Japan's military power is thought far much more of than that of the United States, and a military defeat of the United States* would enable Great Britain to recover her financial supremacy. In other words, it is believed that *the country with the most armament will have the most to say at the* Disarmament Conference.

NAVAL PRIZE ESSAY.—WAR POLICY DISCUSSED IN CASE OF WAR BETWEEN AMERICA AND JAPAN.

Source: Dutch Press.

(14828.)

The following is a translation from the Dutch Naval Magazine, corresponding to "Proceedings of the Naval Institute" of a prize essay by Lieut. (First Class) P. Post Uiterweer. This officer has an excellent reputation in the Navy and is known as a student of international military and political matters. While the essay is in no sense official it still represents the ideas of a large and influential part of the Navy and has received much favorable comment. Attention is especially invited to the arguments in favor of certain types of vessel for defense of the Indies—these being the types now contemplated for construction in the new Dutch naval building program—and also to the conclusions drawn as to the mutual advantages to be gained by Holland joining America in case of war with Japan. It is thought possible that this essay may be of general interest in connection with the question of limitation of armaments:

Let us leave the centuries old relations of the Portuguese and the Dutch in those districts out of consideration then the history of east Asia begins to become of interest to us from 1853, the year in which the United States of America itself owing to the opening of two ports for its shipping, and this by compulsion, gave the first incentive to the revival of Japan that was destined to become its most dangerous competitor in the Pacific. That revival,

however, really only began properly when in November, 1867, the power of the Sjogoen was destroyed, the Mikado himself took the Government in hand and broke for good with the Japanese policy of isolation. It is remarkable for us that those occurrences were indirectly again a result of the action in the Strait Simonoseki, in which this country also had taken a considerable part. From 1868 began the unprecedentedly rapid economic development of Japan, and the military and maritime development went hand in hand with this. Very promptly the aggressive intentions of the aroused nation became clear when it began to occupy itself with the internal affairs of Korea, and, as a consequence of this, the Chino-Japanese war broke out. The course of that war was favorable for Japan, and at the peace of Simonoseki (1895) it obtained Formosa and the Peninsula Liaotong, upon which is also situated Port Arthur, while China had to recognize the independence of Korea.

The annexation of Formosa need not indicate a policy of conquest, seeing that Japan was able to bring forward historical rights to that island. The stipulations, however, with regard to Liaotong and Korea leave no doubt concerning Japan's intentions. Meanwhile Russia put a spoke in the wheel. That Empire, that desired to have an ice-free port in the Pacific, was unable to look on and see that Japan was creating a dominating position for herself in the China Sea. With France and Germany, Russia intervened and Liaotong had to be given back to China with Port Arthur with damages. Hence it was that Japanese and Russian interests came into collision in east Asia.

Further attention should be given to the fact that England was not among the intervening powers, and thus the foundation was laid for a political relation between that country and Japan that later developed into an alliance.

In the years 1898 and 1899 followed the occupation by Germany, Russia, France, and England, respectively, of Kiaochow, Port Arthur, Kwangchow Bay, and Weihaiwei. When, moreover, after the Boxer rebellion that was inter alia the result of that occupation, Russia dallied with the withdrawal of her troops from Manchuria and endeavored to acquire an influence in Korea, the Russo-Japanese War burst out in 1904. The course of that war does not need to be dilated upon here, it was again favorable to Japan, and by the peace of Portsmouth in 1905 it was stipulated that Russia must evacuate Manchuria and that Japan obtain the peninsula Lia-tong, as well as the southern part of Sakhalin, while it should exercise a protectorate over Korea. That protectorate continued to exist until 1910, in which year Korea was annexed by Japan.

Participation in the World War of 1914–18 again brought an increase of influence for Japan in China, the possession of Kiaochow, and great influence on the peninsula of Shantung, besides a mandate over Mariana Islands, the Carolines, and the Marshall Islands.

Meanwhile, after the peace of Portsmouth, relations between Russia and Japan became steadily better, so that finally both powers cooperated in their east Asiatic policy and supported each other's interests there. Both nations extended their influence in Manchuria with mutual approval, Russia in the north, Japan in the south, and as the limit of the spheres of influence were considered the line along the latitude 44° north and the meridian of 116° east longitude.

Beside this rapproachment between Russia and Japan there was to be observed a declining in significance of the Anglo-Japanese alliance. As against Russia that alliance no longer had any significance, nor as regards the United States, which country had concluded an arbitration treaty that put the Anglo-Japanese agreement with respect to that country out of effect. (Note.—Article IV reads: Should either high contracting party conclude a treaty of

general arbitration with a third power, it is agreed that nothing in this agreement shall entail upon each such contracting party an obligation to go to war with the power with whom such treaty of arbitration is in force.) Nor has it any significance for the maintenance of China's integrity any longer, since both countries are continually extending their influence there; Japan in the above-mentioned coastal districts and England in Tibet. As a matter of fact, the treaty was only renewed for one year in 1920, and even that appears to have been accompanied with a great deal of trouble.

The United States of North America is the fourth power with which east Asiatic policy has to take account. The United States is showing a great deal of interest in all matters concerning the Far East and is endeavoring to obtain for itself a considerable place on the Chinese market. So great is that interest that the doctrine of the open door in American policy is obtaining a place that is not second in importance to the Monroe doctrine.

The history of American penetration in East Asia is, however, a succession of facts that gave rise to friction with Japan.

One has only to mention the following:

In 1854 the Americans compelled by force the opening of two seaports.

In 1898 they conquered the Philippines and established themselves at Manila much against the wishes of Japan, and in the same year they occupied Hawaii without taking any notice of Japan's protests. Shortly afterwards America assisted in financing the war against Russia, whose influence in East Asia was feared, but when the United States intervened in 1905, at the peace of Portsmouth, it prevented Japan from obtaining any pecuniary indemnity with which the fleet could be extended.

In 1910 America endeavored to acquire influence in Manchuria, and efforts were made to obtain with money that for which the Japanese soldiers had sacrificed their blood; this was considered in Japan as being insulting. During the Great War and at the peace negotiations there at last arose a strong opposition in America against any extension of Japanese influence in China and on the Shangtung peninsula.

All these difficulties, however, are as nothing compared with the questions that have given rise to the emigration of the Japanese to America. In America the immigration of foreigners who do not assimilate, but retain their nationality and transfer this to future generations, is considered as being contrary to the Monroe doctrine, and it must be admitted that the "penetration pacifique" of such a vital race as the Japanese may be dangerous. Moreover, the characteristics and the morals of the emigrants are but slightly appreciated by the populations of the Western States of the Union. These appear to irritate the Americans, who are altogether without race prejudices, and it was for this reason that conflicts frequently arose. The principal reason for the opposition to immigration is probably, perhaps, to be found in the simpler manner of life of the Japanese, owing to which they are able to be satisfied with smaller payment or profits, and consequently they depress the standard of wages. Immigration had to be limited, and the rights of the Japanese were curtailed; this gave rise to strained relations between the Governments. In 1907 this tension became very great. In those days the New York Times wrote: "The resources of friendly diplomacy were practically exhausted by this Government in meeting the captious Japanese even more than half way. The more complaisant we seemed to be the more pressing the Japanese became * * *. The time came for some action which would take the nature of a definite answer."

That definite answer was the sending of the whole of the American fleet through the Straits of Magellan to the Pacific under the pretext of a maneuvering trip around the world.

The success was complete, for immediately after the appearance of that fleet in the Pacific it was possible to arrive at an agreement, and the reception of the Americans in Japanese ports looked like an attempt at restoring good relations.

Even after that time, however, the difficulties have not ended. The Japanese Government did make efforts to limit emigration to America; with that, however, the matter was not decided. The population of the Western States of the Union continued to issue protests against immigration, and Japan will not agree to a treaty that would prevent the admission of Japanese to the Union.

Canada and Australia have similar difficulties; hence it is not to be wondered at that Sir Joseph War, Premier of New Zealand, on the visit of the American fleet in 1907, stated that a day would come when a decision will have to be made whether white men or Asiatics shall rule Australia and the islands of the Pacific, and that the American fleet will fight shoulder to shoulder with the Old World.

Since even now affairs threaten to take such a serious turn, *while there can not yet be spoken of any actual overpopulation in Japan*, and Japan has only brought its own resources and those of the conquered territories for a very small part under cultivation, it is to be foreseen that when overpopulation really does exist those questions will only be solved by force of arms.

Also, competition on the Chinese market may be able to give rise to conflicts. Mr. H. B. Miller, American Consul General at Yokohama, stated years ago: "If Japan be successful along the lines she is now working, the individuals and corporations of America that are striving for the trade of the Orient will discover that they are not competing for this trade against individuals and corporations of Japan, but that they are in commercial conflict with the Japanese Nation."

How Japan thinks of the solution of such a conflict may appear from the words of Count Okuma, who, speaking on the advantageous situation of Japan in connection with future development, said: "The question of how to make the best use of these advantages may be settled without wasting words. The same cause that enabled Japan to win the victory over Russia will solve this problem." Here are thus reasons in abundance that may be the cause of war in the future. There are, however, others. There is a very great chance that Japanese expansion, that has gone on hitherto principally at the expense of China, will become directed in the future to the south and to the Pacific. There are various reasons for this. In the first place the cooperation with Russia indicates this and the fixing of the limits of the spheres of influence also indicated that Japan wishes to limit herself there. Not too much significance must be attached to the later attempts to penetrate further into Transbaikalia, having in view the especial circumstances under which those efforts took place.

Had Japan really been in earnest then we might have anticipated that there would have been a greater exertion to maintain herself there.

In the second place a very great immigration movement is taking place from China to Manchuria that was until recently a very thinly populated country and against those people the Japanese will not be able to compete economically. In the third place, the Japanese desire for colonization has apparently ceased with the limits of the cultivation of rice. This is very plainly illustrated by the weak colonization of the south part of the island Sachalin, a country that all the same has some exceptionally rich resources.

Even England, that with respect to the Continent of Europe, occupies a similar position to Japan as regards the Continent of Asia, aimed, in the Middle

Ages, at an extension of territory in France, though it only obtained its present position of power after having concentrated all its forces upon expansion in the direction for which the dominance of the seas was necessary.

Account will thus also have to be taken in the future with an eventual Japanese expansion to the south and the Pacific, in which the conquests in the north will have to do service as covering the rear.

The continually increasing industrialization of Japan, accompanied by the rapid increase of the population, make that expansion, in some form or another, a vital question for that country.

In addition it may further be mentioned here that this policy of conquest toward the south is wholly in accord with the feelings of a great part of the Japanese people. This is proved, inter alia, by numbers of newspaper articles, in which our colonies are openly indicated as a future object for expansion.

This insistence toward the south exists principally among the democratic parties that just in the last few years have gained very considerably in influence.

If any effect is given to this endeavor, it is clear that in the first place Japanese desires will be directed to the Philippines. It is just owing to this that it is very probable that the United States of America will be inclined to withdraw from those islands.

If America will remain prepared for the struggle with Japan for supremacy in the Pacific, then it may not leave the Philippines to their fate. Such a course would mean a voluntary giving up of one of the strategic points that is indispensable in the western part of the Pacific Ocean.

Thus there are three main reasons that may bring the United States of America into conflict with Japan, viz, competition on the Chinese market, the difficulties with regard to emigration, and the insistence toward the south, which latter reason may cause also a Japanese-Dutch conflict.

Hence, there exists between our country and the United States of America a certain community of interest in East Asia; this has been still further increased by the fact that after the treaty of Versailles the only line of communication between America and the Philippines that is not dominated by Japan runs through the Dutch Colonies. The sea route to the north of New Guinea is completely dominated by the Bonin Islands, Mariannen, Carolines, Marshall, and Palace Islands, over which Japan has acquired a mandate. It is true that the stipulations of the League of Nations do not allow of any military use being made of those islands; I, however, am of opinion that in time of war no account need be taken of any fulfillment of those stipulations.

Should our colonies fall into the hands of the Japanese, then the ring around the Philippines will be closed and those islands will lose a great deal of their value as a basis for operations in the western Pacific.

Taking all together then it occurs to me to be incredible that the United States would look on and quietly see any attempt by the Japanese to conquor our colonies. There is all the more reason why America should not do so, because owing to that attack, Japan would, as it were, be creating a weak spot of which the American fleet could make use and because the violation of our historical rights might be a means of gaining over public opinion in America for the war. Hence, it is, in the first place, from the United States of North America that we have to anticipate support in the event of any serious conflict with Japan.

It is much more difficult to prophesy what England's attitude would be. It should be said in the first place that, as has already been stated in the foregoing, no significance must be attached to the Anglo-Japanese agreement in this respect. England supported Japan as long as it was able to avail itself of that country in offering resistance to the increasing influence of Russia in East Asia.

After Russia and Japan had come to an understanding, Japan could not be of much further use to England. In the future, therefore, from the nature of things, the mutual relations between Russia and Japan will again have a great influence upon determining the policy to be followed by England in East Asia. If a powerful military power should evolve from the present Russia, then in all probability Japan will endeavor to come to a friendly alliance with that State. The situation after 1912 would then be continued. Further, the occurrences of the last few months point to renewed attempts at advance by Russians in the direction of British India. This, accompanied by the movement that is continually extending in India for the right of self-determination, may cause England in the near future some very difficult years. The rise of the Sepoys was only suppressed at the time with difficulty. Whether it will be possible for England to maintain herself in the event of a general rising, accompanied by an invasion from the north, to put it extremely mildly, is very doubtful. History teaches that all great empires that had been established in the course of the centuries in India have always been brought down by invasions from the north.

It would only be very much against her will that England would enter into the arena against a Russo-Japanese combination, even though the interests of the Canadian and Australian dominions required it. But, even though Russia may be without danger in the next few years, then there are still the difficulties in Mesopotamia, Egypt, Ireland, and in England itself that may considerably weaken Great Britain's position. It is very much a question whether England, with a view to all of these difficulties, will be able to venture upon a war in the next few years, and it would be very comprehensible if Australia and Canada, without breaking the ties with the motherland, should turn more to the side of the United States and conduct a fleet policy of their own.

We shall therefore not be able to rely upon support from England in any conflict with Japan.

That England would take sides with Japan against the United States is also, however, improbable. By doing so it would break the ties with Australia, while Canada would be faced with the choice of either breaking loose from England or being conquered by the States.

Moreover, the language and race questions, commercial relations, and political tradition are against such a thing.

Some friction between England and the United States is to be expected in the near future if the American efforts toward the creation of a great mercantile marine and thus of a powerful war fleet are carried on with energy and meet with success.

In the coming struggle, however, England's place is on the side of America; it is, however, the question whether it will have an opportunity of participating in the struggle.

An American-Japanese war, from which both States would presumably emerge badly damaged, would be of service to England to strengthen that country's supremacy on the seas. Just from that point of view, in the case in question, a neutral attitude on the part of England is to be anticipated.

Where this country's place is needs no demonstration after the foregoing. Our colonial possessions stand or fall with the position of power of the Anglo-Saxon States in East Asia.

Hence it will be useful first to consider the strategic positions of Japan and the United States.

In the first place it is to be observed that the United States has been able to assure itself of a number of points lying all in one line between San Fran-

cisco and the Philippines. These points, Hawaii, Midway, and Guam, have also been availed of for a cable Manila–San Francisco, while Hawaii and Olongapo on the Philippines are established fleet bases.

If we now take the situation as it presumably will be in 1923, then the United States of America possesses 29 battleships and 6 battle cruisers and Japan 11 battleships and 12 battle cruisers; the United States of America possesses 13 light cruisers, 330 torpedo boats, and 166 submarines, and Japan 41 light cruisers, 147 torpedo boats, and 100 submarines.

The Japanese battle fleet, even counting fully the battle cruisers on both sides, is considerably weaker (23 : 35).

Unless, therefore, Japan obtains a chance of settling with one of the two divisions of the American fleet before union can take place through the Panama Canal it will only give battle under particularly advantageous circumstances. (Note.—One has only to think of the possibility of torpedoing the locks by a submarine before a declaration of war in a similar but still more surprising manner than the torpedo-boat attack upon the Port Arthur fleet.)

In this manner we get a somewhat similar situation as the proportions of the German and British fleets during the late war, with this great distinction, however, that England, owing to its geographical situation, had an opportunity of keeping the German fleet locked up in the North Sea, while the Japanese fleet will enjoy a great measure of freedom of movement, and owing to this may be dangerous for American possessions and interests in East Asia. If America is desirous of forcing a decision, the American battle fleet will have to look up the enemy in East Asia. This is made possible by the possession of the Philippines, upon which the fleet can rely.

An attack upon Olongapo or Pearl Harbor is then to be anticipated at the commencement of the war.

To be able to judge the chances of success of such undertakings, account has to be taken in the first place of distances. The distances from Pearl Harbor to San Francisco and to New York (via Panama) are respectively 2,086 and 6,726 miles, while the distance from Yokohama to Pearl Harbor is 3,385 miles. In the most unfavorable case for the United States of America the Japanese forces would only have about a fortnight for its conquests before the whole of the American fleet can be on the scene. It therefore occurs to me that such an undertaking gives little chance of success, even if one takes into account the presence of a numerous Japanese population on the Hawaiian Islands.

The distance between Yokohama and Manila on the other hand is only 1,753 miles, while the distances from San Francisco and New York to Manila are, respectively, 6,886 and 11,585 miles. An attack upon the Philippines therefore has much more chance of success, and if it did succeed the American fleet would be robbed of one of its most important bases. What a difference this would make to the foundations for the further waging of the war will be sufficiently apparent from a comparison of the distances Manila-Yokohama and Pearl Harbor-Yokohama, which are, respectively, 1,753 and 3,384 miles.

For the rest of what are the intentions of the Japanese, these appear clearly enough from their fleet plans. The building of a battle fleet that would be able to meet the American, even with the greatest financial sacrifices, is not within their power. The extraordinarily great number of light cruisers and submarines that they have on the stocks points to their being, of necessity, obliged to resort to a cruiser and submarine action against the line of communication.

With this it should be remembered that Japan only has the points of support that are so desirable for such action in the northwestern part of the

Pacific, owing to which the superiority in light cruisers is, in a measure, compensated for. Nor should the significance of coaling stations in so wide an expanse as the Pacific be lost sight of; these have a still greater importance than in a more limited sphere of operations.

A benevolent neutrality on the part of the countries outside of the dispute, e. g., of Mexico or Chile, might, however, make up in some measure for that lack.

We now go into the question of what communications are of importance for the two countries. In many respects Japan is dependent upon its overseas communications. To begin with, she is not self-supporting as regards the principal foodstuff for the population, rice, and the only countries lying near that have anything like a superfluity of that article at disposal are the thinly populated districts of India. In 1918 Japan drew from Saigon rice to the value of 50,003,631 yen, from Rangoon 33,067,531 yen, and from Bangkok 4,962,967 yen.

With regard to coal, in war time, Japan will be able to provide for its own needs, or at all events only be dependent for supplies of that article upon the communications with Manchuria and Kwangtung that are easy enough to defend. In 1918 Japan drew from Manchuria for an amount of 15,763,704. Against this sum for imports there was an amount in exports of 32,006,494 yen.

Crude iron can also be obtained in sufficient quantities from the Chinese and Korean mines. For manufactured iron, however, Japan is in a great measure still dependent upon foreign countries. Japanese industry is not itself able entirely to provide this need. In 1918 she imported from the United States:

	Yen.
Sheet iron	76, 393, 828
Rails	14, 583, 119
Pipes and tubes	125, 923, 750
Nails	5, 614, 082
Iron and steel plates	77, 149, 750
Boilers	6, 430, 901

It will be observed that among these there are also articles that are of importance for shipbuilding.

With regard to liquid fuel, Japan is principally dependent upon America and the Dutch Indies. Imports in 1918 amounted, respectively, to 7,390,000 yen and 1,147,000 yen. The production of petroleum of Japan herself, it is true, is being increased. Consumption, however, is apparently also increasing in an even still greater ratio.

In order to make Japan self-supporting with respect to wool—with a view to the needs of army and fleet, on the last two estimates sums were set aside, respectively, of 300,000 yen and 460,000 yen, for the promotion of sheep breeding. From China, in 1918, Japan imported 1,904,819 yens' worth of wool, from Australia 22,888,733 yen, and 29,000,000 yen from South Africa.

A part of the material woven from the wool, however, is destined for export. It is proved by the necessity for the above-mentioned measures for the encouragement of sheep breeding that Japan, by any cessation of export, is unable to provide for its need of wool.

Since, however, modern warfare is in a great measure an economic struggle, it will be of the utmost importance for Japan to be able to keep its industries going. In this respect, then, the country is mainly dependent upon its supplies of wool as well as of raw cotton, which in 1918 was obtained from China to the extent of a value of 88,785,644 yen, from British India for an amount of 210,084,179, and from the United States of America for a value of 205,108,129 yen.

The following table of exports will show upon what communications Japan is dependent; the figures given are for exports in 1918:

	Yen.
China, Kwantung, and Hongkong	540, 000, 000
United States	530, 129, 393
British Empire	526, 570, 801
United Kingdom	142, 866, 369
India	244, 731, 147
Colonies in America	27, 334, 805
Australia	64, 827, 941
South Africa	18, 342, 599
Egypt	28, 467, 940
Dutch East Indies	71, 676, 931
Philippines	23, 500, 684
South and Central America	21, 000, 000
Asiatic Russia	40, 034, 435

Some of the above-mentioned countries, however, during the war were compelled of necessity to become customers for Japanese commodities. As soon as normal conditions shall have returned presumably many of those markets will be lost either entirely or partially for Japan.

In the event of war with the United States of America, Japan will further have to endeavor to obtain its metal products, which it is now obtaining from America, elsewhere. Owing to this communication with Europe acquires an increased significance.

Summing up, it may thus be said that the following communications will be of significance to Japan in the event of war with the United States of America:

1. Japan–British India (further) for supplies of rice.
2. Japan–Australia for supplies of metal products.
3. Japan–Australia for supplies of wool.
4. Japan–India for supplies of cotton and export.
5. Japan–Netherlands Indies for supplies of petroleum and exports.
6. Japan–China and Siberia for supplies for export.
7. Japan Canada for export.

For America it is, in the first place, of importance to keep the line of communication with the Philippines. Owing to her threatening the Japanese lines of communication, America will have to try to exercise such an economic pressure that as a last resource Japan will have to risk a naval battle. The cruiser and submarine action required for this, as well as the battle fleet, will have to rely principally upon Olongapo, and it is clear that with anything like a long duration of such a cruiser war the communication between Manila and the motherland will acquire a very great significance.

In the second place, communication with China is of great importance for the maintenance of the place that has once been conquered on the China markets, while also the communication, Panama–San Francisco, must be kept open for the American coastal service.

The task of the American cruisers, torpedoes, and submarines will thus be mainly:

1. Protection of the communication of America with the Philippines.
2. Protection of the American coastal service on the west coast.
3. Protection of communication between America and the Chinese ports.

(Note.—This will only be possible for communication with the southern Chinese ports via the Philippines.)

4. Breaking communication between Japan–Further India.
5. Breaking communication between Japan–India–Europe.
6. Breaking communication between Japan–Australia.
7. Breaking communication between Japan–Canada.
8. Breaking communication between Japan–the Netherlands East Indies.
9. Breaking communication between Japan–China–Siberia. The particulars given under 5, 6, and 7 must all be fulfilled if England and the Dominions remain strictly neutral.

If Holland should participate in the war, then there must be added:

10. Protection of the communication between the Netherlands and the Indies.
11. Protection of the communications in the archipelago and from the archipelago with British India (for supplies of rice). While the communication under 8 would lapse.

Holland's participation would thus bring with it an extension of the task of the combined American and Dutch fleets, but all the Japanese material that would be required for the communications under Nos. 10 and 11 signifies an obligation of the conditions under Nos. 1 to 9, inclusive.

Our naval forces in that case must be at least so strong that a gain is to be looked for owing to this country's participation, if it is to be worth anything to the ally.

For what of the foregoing tasks our fleet will be occupied does not matter, provided that it liberates American vessels. In the first place, however, we shall, of course, have to protect our own communications in the archipelago. Should the Japanese naval forces really be able to seriously damage our communications in the Indian Ocean with the motherland in addition to the heavy task that would have to be undertaken, then that communication might perhaps be able to be transferred through the Panama Canal and the protection of that route be combined with that of the communication between America and the Philippines.

Considering that, as has already been seen, the communication San Francisco–Manila via the north of New Guinea will be very much exposed, our communication with the motherland would perhaps coincide with a second American line of communication running from the east coast of America through the Panama Canal via the American coaling station Pagopago, on Toetoeila, through the Torres Strait to Ambon, and dividing up there into communications with Manila and Soerabaya.

The reverse, i. e., the combining of the American communications with ours, via the Suez Canal, would also be possible. The American communication would then become, owing to this, 12,132 miles instead of 11,585 in length. For safety sake, however, this would presumably require less material; moreover, by this the disadvantage would be got rid of that Toetoeila was left wholly unprotected. Generally all means of communication starting from the American east coast are of necessity much longer than those emanating from the west coast. It will be a question, however, of whether the west coast will be able to provide for all supplies. Should this prove to be so, then in all probability communication by sea from the east will be much easier and cheaper than those supplies coming for a great part to the coast by the railroads.

For the protection of all these lines of communication we must have cruisers and torpedo boats at our disposition, principally, however, cruisers, of which America has a great shortage.

With respect to the more offensive parts of the program, we shall further have to be able, if need be, to assist in breaking the Japanese communications with Australia and British India, for which cruisers will also be required.

The submarines which we shall require for the defense of the archipelago against any direct attack may probably also be used to bring injury to the mercantile marine. In the very first place must then be considered the communications from Japan with India and Further India and with Australia. The requirements to be made for this purpose of the submarines would then, however, be subject to not inconsiderable alterations.

Generally speaking, it is not desirable that there should be made demands of a greatly varying nature as regards the material. On the other hand, however, it is of the utmost importance that, as far as possible, all the available material can be brought into use under all circumstances. It will be the task of the designers of our submarines to investigate in how far the various requirements are compatible with each other. For support in the defense of the Philippines against a Japanese attack they are in any case also of value, though it is to be feared that in that case they would be coming too late to attack the transport fleet.

It may therefore be said generally that the factors that must be present to make it possible to build up a fleet on the basis of the idea of risk are to be found in the international relations of the Far East. Consequently it is possible to make the small material fleet a factor of significance for the balance of power in the Pacific. To this end it is, however, necessary that that fleet shall have a considerable number of quick and strong cruisers at its disposal. In the first place, in order to compel the attacking force to put in a valuable part of his naval forces should he be desirous of proceeding to an attack upon our colonies. In the second place, those cruisers may have considerable value for our most probable ally in coming conflicts.

Also, as regards the defense of the Dutch East Indies, the Government's plans form a useful starting point for our future naval policy, provided that from the very beginning care is taken that besides the nucleus of submarines there are also available the necessary modern cruisers and chasers.

In my opinion these are in any case of at least as much importance as the submarines themselves. One must not look exclusively at the offering of resistance to a so-called first rush. Without in any way underestimating the significance of that resistance in any way whatever, account has to be taken of the fact that the final decision is entirely dependent upon the question of whether our ally with our assistance will be able to insure himself of the mastery of the seas of East Asia.

Our assailant will also be conscious of this, and in determining his plans will have the great purpose in view.

An attack by Japan upon our colonies is only to be considered probable at a time when the United States of America is unable to intervene owing to other complications. America would for the time being have to abide by such a state of affairs so created, though Japan in all probability would at some time or another again have to fight for its conquests.

The American fleet at Manila would entirely dominate the line of communication Japan–Java, and by doing so would be a weak spot for Japan in the inevitable fight that would follow for the communication routes.

It then also occurs to me to be much more probable that Japan would avail itself of such a period of powerlessness on the part of the United States in East Asia, in the first place, for the conquest of the Philippines or of Hawaii, by which it would be insuring itself for the future of the maritime supremacy in the western Pacific. Our colonies would then fall in Japan's hands without much trouble.

Any direct attack upon our colonies is thus probably only to be expected after that country shall have secured for itself the supremacy of the western

Pacific, either by the occupation of Olongapo or Pearl Harbor or owing to the fact of the American fleet having been beaten.

We should not be able to do much to prevent the conquest of those two bases as long as we have no battle fleet at our disposal. In the struggle for supremacy at sea, our cruisers indirectly form a considerable support for our ally. Hence, I attach at least the same significance to these as to the nucleus of submarines.

It is undoubtedly true that circumstances become somewhat different if England is our ally and not America. In that case, under certain circumstances, an offensive action on the part of Japan is quite without the region of possibility, and then the submarines present in our colonies gain in significance, while as a consequence of the situation of the lines of communication that would then be of importance, as well as a result of the great number of cruisers that England has at her disposal, the comparative value of our cruisers would decline. This, however, does not detract from the fact that even in that case they would be of great assistance to our ally.

In the most undesirable and most improbable case of our being compelled by circumstances to take sides with Japan, a state of affairs that endeavors must be made by all possible means of averting, or in the improbable case of a war breaking our between England and America and our being involved in it, our naval forces will in any case not be without significance for the struggle.

In determining our naval policy an endeavor will have to be made in the very first place of making our fleet a factor of significance in any Japanese-American conflict.

There is, however, one thing I would emphatically stipulate, viz, that our fleet base must be defended so strongly that this would be in a very great measure proof against any eventual first attack.

Summing up, my opinion is that seeing that everything depends upon the struggle for the mastery of the seas, in the first place we must support our ally in this, if possible, by reinforcing his battle fleet; if that can not be done, then indirectly, by taking action on the lines of communication.

Mahan quotes with agreement: "Good partisan troops, says Jomini, will always trouble communications, even the most favorably situated." All the forces that we use for any other purpose than in the direct or indirect support of our ally are in the end those that will have little or no influence upon the final result. Even in the late war we saw that each of the allied powers considered his own front the most important and was desirous of concentrating all his forces there. The tardy arrival of success for the Allies must certainly be attributed in no small measure to this. It is not easy to be a good ally, because a beginning must be made in setting aside wishes of one's own, the fulfillment of which at first sight appear favorable, but which on further consideration will prove to have been injurious to the final decision. For that reason no more money than is necessary should be applied to the obtaining of material, the use of which is limited to the archipelago and confined to certain places. As far as possible everything must be able to be brought in as an asset for the struggle for the decision and its preparation. The small material fleet of the Government's plans can satisfy this if sufficient attention is paid to the construction of modern rapid sailing cruisers and chasers, as well as on the radius of activities of the submarines.

The foregoing remarks of necessity cause the question to arise, What must Holland do should Japan attack the Philippines? In my view there is only one answer possible. If Japan attacks the Philippines it would be attacking the principal guaranty for our colonial possessions, and this country may not remain inactive. The Dutch people, however, will in all probability have another view.

In that respect, too, it is necessary that there should be a careful and tactful enlightening of the people. It is another question whether we require an alliance with the United States.

I do not think so, though mutual agreement concerning the support to be given by each in the event of the Philippines or the East Indies being attacked by a third power would be useful and be wholly in accord with the intentions of the Covenant of the League of Nations.

There is now only left the question of the personnel. It is not possible to analyze this at sufficient length within the scope of this essay; I shall therefore have to refrain from handling this. I will, however, allow myself to make one observation.

In the near future great difficulties will certainly be met with regarding the question of personnel, nor is the danger that less high requirements will be made for recruiting and promotion merely imaginary. It should, however, not be forgotten that elements admitted in this way in the end will affect the whole service with the stamp of inferiority and will make it more difficult to obtain the services of the better elements among the people for the Navy. Though the number of those taking service may be still further decreased, it should be a question of increasing quality against quantity.

In the end, however, the question of personnel is only to be definitely solved by getting the people to a proper appreciation of the significance of our naval forces for our national existence.

In this respect the Navy requires the preparatory work of those who have the greatest interest in the maintenance of our rights throughout the world, of the most prominent men in the shipping world, the worlds of trade and industry. It is only these who, in conjunction with the intellectual leaders of our people, will be able to lay the foundation upon which the organization of our sea power will be able to be continued.

At the present time our country rejoices in a disproportionate share of the total colonial possessions and of the trade of the whole world, while down to the present we have done practically nothing for the protection of that privileged position.

The Government's plans re the reorganization of our sea forces open up the possibility of putting an end, within a measurable distance of time, to the present situation of practically absolute defenselessness at sea.

Hence it is of the utmost importance that those plans should be carried out, and it is the duty of the corps of naval officers to support those plans, setting aside any differences of opinion that may prevail with respect to minor details.

The main thing is that we should now come into possession of a nucleus consisting of modern material with which every invader will have to take account.

Should, however, the Government's plans not be carried out, then all chance of our sea forces being developed is cut off and our shipping and our colonial possessions in the coming years with the continually increasing struggle in the economic sphere will be handed over to the will of others without any protection whatsoever.

NOTE.—When Government plans are spoken of in this essay, are meant in the first place those plans which have reference to the organizing of our naval forces in the Indies, thus to the so-called small material fleet. In this connection must very certainly not be included the institution of a department of defense that would be so extremely dangerous for our naval forces.

JAPANESE POLICY.

Source: Reliable. (Observations of a Naval Officer Recently Returned From the Asiatic Station.)

1. The notes that follow were in part obtained from recent visits in Japan, the last of which was with Gen. Wood's mission during October, 1921. They are submitted only as an average of impressions that were gained from various American and foreign officials in the Far East.

2. Japan has created for herself in the west a semicircle of hostile peoples. The Siberians have acquired a deep hatred of a yellow race, that has at present lodged itself in Siberia in a position where they are actually directing the affairs of a white people. The Koreans are still in a state of resentful unrest and still express revolutionary tendencies. The Chinese detest the Japanese and still carry on the boycott against them. The Filipinos universally fear, distrust, and dislike the Japanese. The aborigines in Formosa still wage active warfare against the Japanese constabulary. British residents in the Far East speak scathingly of Japanese in a surprising manner.

3. During two years of travel throughout the Far East the writer has never heard a single individual that has had a good word to say of the average Japanese.

4. This universal animosity will in the north hasten the inevitable return of the Russians for the control of ice-free ports on the Siberian seacoast, practically all of which are now under Japanese authority.

5. In Manchuria the Chinese must submit to Japanese control of communications, for the use of which both America and China must pay toll for their trade in this area. The Chinese are not openly unfriendly here, partly for business and partly for political reasons. Chang Tso Lin, for example, is forced to play to the Japanese, but it is believed that this war lord of China finds it much to his distaste. When Gen. Wood was recently at Mukden, Gen. Chang went so far as to accompany the American general to the train after his departure from the "Yamen," where dinner had been taken. Gen. Chang's parting remark was, "I hate these Japanese." Maybe this was politics; more possibly it was truth.

6. Chinese have remarked that they will never take back Shantung with any strings to it. They have said that the Province is like stolen goods. The owner can not, with dignity, take them back unless the offender is publicly brought to justice, and certainly not if the goods in question are returned without proper recompense.

7. In Formosa the aborigines, according to a fairly reliable informant, sometimes pick the lead out of the Japanese sentries that they have succeeded in shooting, in order that it may again be used for

sentimental reasons. When the writer was in Formosa a year ago, six of the constabulary had recently been killed while on patrol.

8. During a recent trip of some 15,000 miles throughout the Provinces of the Philippines, not a single person could be induced to speak well of the Japanese. From an analysis of opinions that were obtained, the following reasons are ascribed to the attitude of the Filipinos:

(*a*) The women of the islands, who exert a great deal of influence in their own country, dislike everything Japanese because of the attitude of the latter towards women. The Filipinos, it is true, have an exaggerated idea of a low standard of women in Japan.

(*b*) The church takes a consistent stand against the Japanese, because the priests realize that Japanese influence in the islands would seriously handicap the progress of the Catholic religion.

(*c*) A rather surprising knowledge of the Japanese policy in Korea is prevalent throughout the islands, and the people have come to realize that with its type of domination they would have to begin all over again with another language and loss of the independence they now enjoy. They see that the wealth of the islands would pass, not only to an arrogant foreigner, but to non-Christians, while they, so to speak, would pull the rickshas. America has little to fear in the Philippines as regards any sympathy of its peoples for Japan.

9. The attitude of the British in the Orient is of extreme dislike. Part of it is traceable to the failure of the Japanese to keep their word during the war in regard to promises for the use of cargo space for British goods when such space was scarce and only obtainable by the British when not desired by Japanese at the last moment. It may be of interest to note here a remark by the head of the Hongkong-Shanghai Bank at a banquet at Hongkong for Gen. Wood, which was attended by the British governor and his staff. In effect the banker said: "Now, I am not allowed to say anything about politics at this gathering, but I would like to remark that if anybody is going to save what is left of the world it must be done by America and England together."

10. The above paragraphs are included to illustrate the belief that this entire lack of friends constitutes a serious proposition for Japan.

11. In a war with America she will be dependent upon natural enemies for her great bulk of war material and food. As a result she must have a large army available at all times.

12. This army during peace times is used to carry out a policy of spreading her influence on the continent to the extent of getting all she can just short of war. The bottom of that policy seems to be traceable to two principal causes. First, Japan has learned from the European nations that it has been the fashion to get spoils out

of Asia with troops and ships. Second, comes her latent and deep resentment against the discrimination of the white man. Nothing has caused her so much resentment as the white man's insults to her social dignity, particularly when they have to mix with her intense pride and patriotism. Out of this resentment has come a strong impulse to build up an empire to a position where the Japanese can enforce equality, or, receiving no recognition from others, will give none. Their exclusion from the lands of white men has built up what is probably the worst and most difficult of all Japanese problems. It is like a pressure from the east and south which has naturally driven them west and north, and resentment is the spur that has made them more determined to strengthen their position up to the desired goal.

13. General ideas concerning the growth of Japan's navy and its present abnormal program can be grouped under four heads:

(*d*) America's entrenchment in the Philippines.

(*e*) Preferential naval protection required by an insular power.

(*f*) The naval forces needed to back up a policy of spreading her sovereignty over new territory that is rich in much needed raw materials. With this policy goes the theory, "The more Navy, the more we get," as the larger her Navy the more leeway will other powers probably allow Japan before going to war.

(*g*) In addition to the above, the Japanese feel that without a Navy they would become subject to the slights and even contempt of the big powers, and that it is only the existence of their strong Navy that obtains for them the limited respect that is given them to-day.

14. As regards the attitude of the Japanese towards war, it may be said without hesitation that they will never be afraid to fight. Centuries of training have produced a people that still retain in general the soldier instinct, with ability to live a soldier's life of thorough discomfort and the most meager amusement, and yet placing at the same time, the higest value upon the simplest honors that the country may confer upon them for military service.

15. At the same time it is believed that the Government is at present decidedly against war. Japan's universal unpopularity, the non-completion of her naval program, the presence of aggravating strikes and social unrest, and the embarrassing situation in Siberia, make it inadvisable that any such step be risked for a few years.

16. The concensus of opinion would indicate that the Japanese would make a considerable sacrifice to avoid war at the present moment.

17. A word might be said here about the economic situation. The whole country is under a strain. There are not enough markets available for the sale of her manufactures. Prices are high and

more rice riots are predicted. The supposed necessity for the upkeep of both a large army and a large navy makes an enormous drain on the financial resources of the Government and has kept taxes at a height which makes life for the common people a monotonous and discouraging struggle for mere existence.

18. An important point in Japan's economic situation was brought up in a recent magazine article, where the statement was made that Japan can not compete with American trade in China on equal terms. At first thought it would seem that distance would put everything in Japan's favor. The writer does not know enough about the question to express an opinion, but believes the question to be of sufficient importance to justify investigation. It is true that the United States has in her own country raw materials for her manufactured exports, while Japan must obtain her raw materials from abroad, import them, turn them into manufactured articles, and then again export them to their destination. It is evident also that the enormous percentage of imports that Japan obtains from the United States must be brought almost the same distance that American products must travel for foreign trade, and that Japan must pay an extra expense of handling these materials four times before the goods are again on board ship. Again, due to Japanese unpopularity and the reputation she enjoys for unreliable goods, the continental people always show preference for American goods. If it should be the case that Japan's position is more difficult than we imagine, it would, of course, be inadvisable to press her at any point that will not stand too much pressing.

19. As regards Japan's expansion, it seems likely that England is her hero as an example of what an insular power can accomplish. The principal trouble, however, is that Britain and a few other powers have acquired practically all of the available colonial territory, and that Japan is continually getting into trouble by trying to acquire space already claimed by some one else. Not to be kept out of the party she has, nevertheless, taken toll from China, Korea, Russia, and Germany. It is of interest to note that if the United States should withdraw from the Philippines and Guam there would be but one last stronger power actually present in Asiatic territory—Great Britain.

20. The theory has often been advanced in the Far East that there is but one way to deal with the Japanese and that is by force. Though the experience of the writer with the Japanese has not been extensive, it is, nevertheless, believed that this theory is dangerously wrong. The display of force carries with it discourtesy, and the use of discourtesy with the Japanese certainly will accomplish as little as possible. As one official expressed it, "Courtesy in the foreground, with force in the background, will obtain better results."

21. It has been said that Japan stands at the parting of the ways. As an insular power, full of impulsive energy and restlessness, that surpasses that of all of her continental neighbors, she is bound to expand her influence. And it must be admitted that expansion to her as a congested insular power is—like it was for England—more for necessities, while expansion for a large continental power is more for luxuries. If Japan adopts a German attitude in this expansion, she will probably find herself in a war in the next few years. If she can temper her actions along the lines of British colonial policy, or better than that, along the lines of what America has done in the Philippines, she can attain a place as a real first-class power. It has been aptly said that Spain colonized with a sword and a church, Japan with a sword and a jail, and America with a road and a school.

22. It is believed from what has been observed of the Japanese in their capacity for hard work, their pride in their achievements, their power of imitating the best things obtainable from other nations, that if only they could devote these qualities along higher lines, that they could attain a position as one of the first-class representative powers in history. If the enormous expense of her Army and Navy were cut down and the savings devoted to education, communications, commerce, and betterment of living conditions, her people would progress with a better foundation. Her present advancement is artificial. The naval and military burden is undermining her whole social structure. Her expansion with its doubtful legal aspects has a false and insecure basis for the foundation of a great people—for such the Japanese desire and believe they are destined to become.

19. The question of recognition of their people on terms of equality is one for they themselves to solve, not by force of arms but by the peaceful, economic, and social development of their own individuals to the point where they will be more acceptable by other nations. Much time will certainly be required, but when their standard of living is raised, when their business integrity is of the highest, and when they seek to spread their influence by friends and not by force, then it is believed the white people can limit immigration from all other countries down to a point where the Japanese can be included on some better basis than at present. Now her military and naval burdens draw her not only in the opposite direction but toward war, as their very existence must continually be justified by expansion through force of arms.

SHIPMENT OF MUNITIONS TO MEXICO.

Source: Reliable.

The following information relative to a projected shipment of small-arms ammunition to Vera Cruz, Mexico, has been received:

An Italian steamship man came into the office and stated that he was interested in a small steamer that was under charter. He stated that the charter parties were contemplating loading a cargo of rifle ammunition (about 30,000,000 rounds) somewhere in Jugo-Slavia and destined for Vera Cruz, Mexico. The rifle ammunition, he stated, was not Italian but ex-Austrian. He further stated that the parties shipping the ammunition were Mexicans.

My informant stated further that the vessel was too small to cross the Atlantic and that the cargo would probably be transshipped to some other vessel somewhere on the Adriatic coast. He could not state whether the cartridges were to be consigned to the Obregon government or to other parties. The gentleman seemed to be prompted only by a desire to give me information as representing a government friendly to his own. He has promised to furnish me with further information in the premises as it develops.

This information is made the subject of a letter rather than a cable, as it will reach Washington before the shipment, if such be authentic, can start.

THE TURBO GUN OF M. DELAMARE MAZE.

Source: Reliable.

(13031.)

1 October, 1921.

Referring to the gun, which in 1920 was the subject of so much exaggerated comment, in April, 1920, the inventor, Mr. Delamare Maze, now considers his invention complete and that he is able to design any caliber of gun desired. Mr. Delamare Maze has addressed a letter to this office inclosing a note setting forth the advantages of his turbo cannon. He has also given a blue print of a design for a 75-millimeter (3-inch) gun (scale, natural size). The letter and note follow.

LETTER DATED SEPTEMBER 19, 1921.

DEAR SIR: Inclosed please find a note on the advantages of the turbo cannon. This note was written over a year ago. Experiments made since have only confirmed it. Several guns have been built by the English, Belgian, and Italian Armies and results have proved the statements of the note. Of course, these guns did not at first give the best results, but experiments have shown how they may be improved, and I am ready now, with the help of Delaunay Belleville, to build guns of any caliber much lighter than the guns actually in service and without recoil.

A gun antiaerial, without recoil, of 80 caliber, has been designed (to fire 25 to 30 shots per minute), weighing 1,400 kilograms, mounted on a 3½ Delaunay Belleville lorry. The weight of the projectile to be 9 kilograms and the muzzle velocity to be 1,100 meters (3,600 feet).

This gun fires at all angles and in all directions. Besides the gun the lorry carries 120 rounds of ammunition and may run at the rate of 25 kilometers per hour.

I have given you the drawing of a 75 accompagnement gun for infantry, weighing 66 kilograms.

For mounting on airplanes the absence of recoil and the decrease of weight make my guns invaluable. I am now studying new models, together with the French aeronautical service.

Should the American Navy want to study my process, I am willing to act toward the United States the same as I did with the Italian Government, that is to say, to sell the United States an option for one year, during which experiments may be made. If such an agreement is made I am willing to proceed to the United States and design any gun and remain during the firing tests.

I have designed lately for the Italian Navy a 152-millimeter (6-inch) gun without recoil, with a muzzle velocity of 1,400 meters (4,593 foot-seconds).

In my system very large guns without recoil may be mounted on comparatively small crafts, these guns being much lighter than those now in use and having no reaction on the decks.

Hoping that the above will prove satisfactory, believe me.

(Signed) CH. DELAMARE-MAZE.

NOTE.—"ADVANTAGES OF THE TURBO CANNON."

Combustion of Powder.

For a given capacity of the explosion chamber and a given vivacity of the powder will correspond a certain pressure and the flow of gases rushing through the narrowest section of the nozzle will continue at that pressure as long as the powder burns, provided the surface of the powder grains remains about constant.

This constant pressure will be attained when the flow of gases at the narrow section is equal to the flow emitted by the burning powder.

This is also due to the fact that the explosion chamber's capacity remains constant, whereas it varies in the ordinary gun as the projectile advances.

The velocity of the elementary gas molecule is constant at the narrow section for a given brand of powder and only depends on the temperature at which this powder burns.

The weight of the gas flowing in 1 second through the narrow section is therefore proportional to the pressure.

As the gases pass through the nozzle they expand and their velocity is increased according to a law which is given in Mr. Langevin's report.

For a given nozzle, the velocity of the elementary molecule is therefore constant for a given brand of powder burning at a certain temperature.

For a given nozzle, the weight of gases or of powder, which is the same, passing in 1 second is therefore proportional to the pressure in the explosion chamber.

For B. powder, it is equal to 8 grammes per 1 square centimeter of surface at the narrow section and per 1 atmosphere pressure.

The pressure depending, as aforesaid, on the powder vivacity, it may be seen that, by varying the surface of the powder, in other words, changing the thickness of the grains, the pressure may be changed at will. The time of the flow will only be changed, without changing the momentum of the elementary molecule not the final M. V. of the gases (quantite de mouvement).

Action of the Gases Upon the Projectile.

The impulse communicated by the gases to the projectile is due to two causes:

1. The shock of the molecules against the base, and second, the pressure remaining in the gases after they have been expanded through the nozzle.

This causes two kinds of pressure, one dynamic, the other static, the sum of which Mr. Langevin has called the *force de la tuyëre* (force due to the nozzle).

For B. powder the force of the powder varies between 1.25 and 1.85 multiplied by the surface of the narrow section in centimeters, and the pressure in the explosion chamber in kilos per centimeter, and it is increased by about 20 per cent for Ballistite, which burns at a temperature about 1,000 degrees centigrade higher than the B. powder.

The effect of this impulse is a great deal more constant than the pressure in the ordinary cannon because the quantity of movement MV remains constant as aforesaid. Therefore the acceleration remains nearly constant and the mean acceleration in the turbo-cannon is higher than the mean acceleration in the ordinary gun *although the peak of the pressure remains lower.*

The acceleration varies with the pressure, or, in other words, with the mass of gases per 1 sec., but for a same weight of a given brand of powder, whatever may be its vivacity, the total impulse remains constant and therefore the muzzle velocity of the projectile remains constant.

Hence, for a given weight of a definite powder, the muzzle velocity of the projectile is constant and independent of the pressure in the explosion chamber.

This chamber can therefore be calculated for any pressure at will, with a brand of powder accordingly chosen, and the length of the gun depending on the acceleration is the only changing element.

As the mean acceleration is higher in the turbo-cannon the average length of the gun is shorter.

The gases escape backwards and tend to send the gun forward, hence the recoil is decreased and may be altogether annihilated with proper designs. This, however, would be done at the expense of an extra load of powder.

The weight of the gun is smaller than with the ordinary cannon.

This has been proved by French experiments.

Finally, a most important point is that the gases are allowed to expand and take a very great velocity and that their vis viva (puissance vive $= \frac{1}{2} MV^2$) is at hand immediately at the end of the nozzle, whereas in the ordinary gun the total vis viva can only be recuperated at the end of the muzzle, obliging the designer to utilize over 100 calibers for high velocities. Calculations show that for very large guns (520 mm. for instance) 80 calibers should be more than sufficient to attain 1,400 meters muzzle velocity.

With 1-ton projectiles. Such projectile could be loaded with nearly 40 per cent explosives, as the mean acceleration would not exceed 50,000 or 5,000 times the gravity.

The Turbo-cannon is to the ordinary gun what the steam turbine is to the old reciprocating engine. The theory which goes for one is applicable to the other and the advantages of one over the other are of the same order.

All the experiments made so far confirm the above statements.

High velocities above 1,000 meters have been attained, but it has been decided by the French, English, Belgian, and Italian Governments to proceed immediately with the experiments to see how much higher velocities may be attained. Theory shows that 2,000-meter velocities and even over may be expected.

Characteristics are given on blue print, but are reproduced here so as to be on record in case the blue print should be mislaid.

Weight of gun	66 kilos (145.5 lbs.)
Capacity of chamber	1 liter (61 cu. in.)
Length of rifled portion 6 meters	(1 ft. 11.6 in.)
Weight of projectile	3 kilos (6.61 lbs.)
Charge of the projectile	0.5 to 0.9 kilo (1.1 to 2 lbs.)
Angle of rifling	7°
Initial velocity	300 to 450 meters (984 to 1,476 ft.)

The fundamental principle of the gun may be thus briefly formulated: The powder gas resulting from the burning of the powder passes through a contracted nozzle (a sort of Venturi tube) and impinges against the the base of the projectile. The kinetic energy of the gas is thus used. The maximum pressure is lower than in ordinary guns and the thickness of the walls of the gun can be reduced. Gen. Charbonnier, in his lecture at Metz, February, 1921, on the progress of artillery material stated that "the results attained at the end of the war enabled a projectile to be fired from the regulation

75 mm. using a charge certainly much heavier (double) than the usual charge, but with maximum pressures inferior to those in ordinary guns, yet obtaining a velocity as high as about 600 meters" (1,968.5 ft.).

Referring to the blue print, AA′ represents the forward limit of the powder charge BB′ the base of the projectile. The gases traversing the distance AB (180 mm.) acquire a high velocity at which they impinge against the base of the projectile.

The maximum pressure is always against the face of the breech plug. The pressure at the narrowest section of the nozzle is always 53 per cent at the maximum. The pressure from this point to the base of the projectile is decreasing. All this information is obtained from the inventor and is therefore ex parte. I understand that the Italian Government is building a 4-inch gun of this type as an experiment. The Italian naval attaché expects that an assistant in this office will be permitted to witness the experimental firing.

Another very important feature of this gun is the elimination of the recoil. The writer saw a 25 mm. (1″) gun constructed on this principle, fired several times in the proving tunnel of the Delaunay Belleville establishment. The recoil was even negative. The checking of the recoil is due to the reactive effect of the escape of the gases to the rear. It is understood that the Gallio-Bory muzzle brake only reduces the recoil about 25 per cent.

The complete checking of the recoil in the Delamare-Maze gun, coupled with the material reduction of weight of material, would indicate important use of this gun mounted on light structures, such as the deck of destroyers, submarines, and aricraft.

I understand French aviation is interested in this gun. Its real merit can only be determined after such experiments as the Italian contemplate have been carried out.

Mr. Delamare-Maze offers an option of one year to the United States during which experiments may be made; he would probably charge more, however, than he did in the case of Italy.

UNITED STATES CHINESE RELATIONS.

Source: Reliable.

(9920.)

6 September, 1921.

The following is a copy of a report made by the American consul in Chungking to the Secretary of State as regards the above subject:

I have the honor to report that this office was in receipt of the following dispatch from the commissioner for foreign affairs on the 15th instant:

"I have the honor to inform you that a telegram was received from Commander Tan of the First Army Corps of Szechuan as follows: 'A telegram dated

the 13th instant was received from Liu Min Chao (—), commander of the first regiment of the 2nd mixed brigade of the 1st army corps, to the effect that: "To-day upon arrival of our junks loaded with soldiers at Chien Tao Hsia we met the S. S. *Alice Dollar* on her way up at full speed. We immediately waved our flag and beat the drums as a signal for her to slow down, but no notice was taken and four of our junks loaded with troops were sunk by the wash of the steamer. Over sixty soldiers were drowned, with an additional loss of over 80 rifles, over 20,000 rounds of ammunition, over 20,000 silver dollars, over 10,000 strings of copper coins, an official seal of the commander of the 3rd Battalion, and innumerable official and personal property. Please have the steamer held up at once and take this matter up strongly with the party concerned. Liu Min Chao, regimental commander." It appears that the S. S. *Alice Dollar* belongs to an American company. When the steamer met these troop junks we waved our flags, and beat our drums as a danger signal, but the steamer continued at full speed and paid no attention to our soldiers' lives. or money, or property. This is very careless and cruel conduct.

" ' In addition to telegraphing this matter to the generalissimo, I have the honor to request that you will at once take this matter up strongly with the American consul, and to request that the steamer be held for payment of losses sustained by us, and that the engineers of the steamship *Alice Dollar* be punished if found guilty in order to maintain the dignity of international relations accordingly. Please take immediate action and favor me with a reply. I have the honor to observe that as this case involves the drowning of so many soldiers and the loss of a great quantity of military supplies it is my duty to request that you will make an immediate investigation into this matter."

This dispatch was translated and a copy sent to the Robert Dollar Co., with a request that it be immediately investigated and a report sent to this office.

On the evening of August 15, at about 7 o'clock, a representative from the foreign office called upon me and informed me that the troops at Wanhsien being greatly incensed at the sinking of these four junks and also because the money lost was their pay for last month, had gotten out of hand and that Gen. Tan was unable to control them. He requested that this office should request the Robert Dollar Co. to delay the sailing of the steamship *Robert Dollar II*, then in port, to prevent any disorder of troops down the river.

Being unable to get in touch with the British consul at that hour, I immediately went aboard the H. M. S. *Cockchafer* and requested her captain to attempt to get into wireless communication with the U. S. S. *Palos*, the *Palos* being up the river at the time. This he did, but was unable to get in touch with the *Palos*. While I was aboard the *Cockchafer* a letter was received from the Robert Dollar Co. stating that a large number of troops had surrounded the steamship *Robert Dollar* and told her captain that if she attempted to sail the next morning that she would be fired upon. The captain of the *Cockchafer* and myself immediately went aboard the *Robert Dollar II*, and found that there were soldiers around the boat, but that upon being warned not to come aboard had gotten off peacefully.

After quite a discussion it was agreed that in view of conditions, the S. S. *Robert Dollar II* would not sail the next morning according to schedule. I then went over to call on the commissioner for foreign affairs, and made a strong protest against any soldiers being stationed about an American vessel. He informed me that Gen. Tan had sent the soldiers as a guard for fear that some of the soldiers stationed here might cause some disorder. We talked over the situation and I informed him that the local manager of the Robert Dollar Co. and myself would call upon him the following day.

The morning of the 16th instant I sent telegrams to the U. S. S. *Palos*, at Luchow, Suifu, and Chiating, requesting that she return at once, and then accompanied by the manager of the Robert Dollar Co., Mr. P. C. Windham, went to call on the commissioner for foreign affairs.

Mr. Windham assured the commissioner that after due investigation in the event of the Robert Dollar Co. being in the wrong, that every effort to make a fair settlement would be made.

Accompanied by the commissioner we then called upon Gen. Tan, commander of the first army, and Mr. Windham repeated his willingness to assure the general that in the event of the Dollar Co. being in the wrong that all possible would be done to have a just settlement.

The general stated that his troops were very angry about the sinking of these junks, and he was unable to quiet them without a payment of the losses. He was informed that such a thing was impossible until a thorough investigation of the case had been made.

Mr. Windham offered to wire the head office in Shanghai, asking their permission to give a written guarantee that the awards decided upon in the investigation would be paid.

Gen. Tan expressed himself satisfied with this, and requested that Mr. Windham give him a personal letter to the effect that such a telegram was sent. This Mr. Windham agreed to and requested that the troops down the river be notified that a satisfactory settlement of the case had been reached. This Gen. Tan agreed to and also issued orders that the soldiers about the vessel should immediately withdraw.

The vessel sailed yesterday morning without any disorders and everything seems to point to a successful settlement of the case without trouble. I am anxious about what might happen upon arrival of the S. S. *Alice Dollar*, and so have requested the *Palos* to immediately stand by.

UNITED STATES NAVY CATAPULT.

Source: Official.

The following brief description of the catapult has been given to the press by the Bureau of Aeronautics:

The outstanding problem of naval aviation is to get airplanes into the fleet, and for this purpose means are being developed to launch and to recover the airplanes which are provided for operations with the fleet at sea. The department has presented to Congress its views as to the necessity for the addition to the fleet of special vessels called airplane carriers which shall be built with a flush deck upon which airplanes may start and to which they may descend. The matter is still pending before Congress, but even though funds were appropriated in the near future for the construction of such vessels it will be several years before these ships could be built and put into the fleet. In the meantime the Navy Department is converting the fleet collier *Jupiter* into an experimental aircraft carrier by the removal of its coal handling gear and the addition of a flush flying deck. In order to insure the launching of

seaplanes when the vessel is pitching and rolling, a catapult for launching airplanes is being installed on the vessel.

In addition to carrying aircraft on special vessels it is anticipated that fighting and spotting planes may in future be carried on battleships and cruisers, although it is clearly impossible to provide these ships with the flush deck as in the case of the carrier. To permit the launching of airplanes from a battleship or other war vessel the catapult has been resorted to, and a special type of catapult has been developed at the Philadelphia Navy Yard which has been designated a turntable catapult, because the catapult mechanism proper is mounted on a turntable so that it can be pointed into the wind when launching a plane. One catapult of this type could be installed on every battleship and could launch when needed a fighting airplane, so that a fleet of battleships would be able upon the approach of hostile bombing airplanes to send into the air instantly a large number of fighting planes to shoot them down before the bombing attack could be developed. This is the real answer to the threat of the bombing plane which was demonstrated in so spectacular a manner by the recent bombing from the air of the ex-German warships.

In the bombing attacks of these ex-German warships it was shown that bombs dropped from the air could do material damage to warships which did not defend themselves. Obviously a warship can defend itself by antiaircraft gunfire, but better by attack in the air. The weapons of offense and defense in the history of naval warfare have always developed step by step, and the development of the heavy bombing airplane is being met by this development of a catapult which will shoot fast combat planes from the decks of battleships into the air to repel bombing attacks.

The catapult of this particular type is new, but the elements are the result of Navy catapult development initiated in 1911 by Capt. Washington I. Chambers, at that time in charge of naval aviation experiments. The first flight was made November 12, 1912, by Commander (then Lieut.) T. G. Ellyson, in a Curtiss seaplane from a catapult. This early catapult was highly experimental, and while the first flights were successful the device was not entirely satisfactory. The matter was resumed in 1915 when the development of naval seaplanes had proceeded to such a point that it was clear to the Navy it would be desirable to take aircraft to sea. A new design of catapult, based on experience with the first one, was installed on the stern of the armored cruiser *North Carolina* and successful flights were made. The *North Carolina* installation proved so reliable that similar catapults were installed on the armored cruisers *Seattle* and *Huntington*, and during the early winter of 1916 successful flights were made from these cruisers. At the time the

United States entered the war the principal naval effort was anti-submarine in its object and the convoy of shipping. Aircraft were not needed aboard these cruisers for this purpose and the catapults were removed. After the armistice the catapult problem was again taken up and a catapult, similar to the *North Carolina* design, which had been in use at Pensacola for training aviators while mounted on a coal barge, was brought to Washington and further tests and investigations made. The result of this investigation led to the design of the present turntable type of catapult which has now been completed at the Philadelphia Navy Yard and mounted on the water front for practical testing with aircraft.

The old catapults, such as were used on the *North Carolina*, consisted of a track along which a carriage was propelled by a compressed-air cylinder. The airplane was mounted on this carriage and as the carriage speeded up it released the airplane at the end of its run, allowing it to fly into the air. The track for this catapult was mounted along the center line of the ship and since it was necessary to launch the airplane direct into the relative wind it was necessary for the ship to set herself on such a course that the wind blew in the direction of the catapult track. This maneuver while entirely feasible necessitated the ship turning out of formation or heading upon some course which might prove very disadvantageous. For a battleship it is considered impossible to require the ship to leave formation and to head upon a course which is possibly of great tactical disadvantage only for the purpose of launching a plane. These considerations led to the development of the turntable catapult which permits the ship to proceed upon its usual course in formation while the catapult is trained like a turret into the relative wind.

The turntable catapult consists of a bridgelike structure mounted on a turntable upon which there is the usual car which carries the airplane, and this car is propelled by compressed air. Frequent tests have demonstrated that it is possible to launch by such mechanism any of the types of airplane or seaplane which would be carried upon a battleship.

The problem of launching an airplane in a short run by means of the catapult depends upon several factors. The first and primary one is, of course, that at the end of the run the catapult should have given the plane a speed such that when the plane is released from the car the wings will lift it into the air and flight has begun. This requires that the launching velocity shall be somewhat in excess of the minimum flying speed of the plane.

Second, it is necessary while the plane is being brought up to this flying speed that the plane be held securely to the launching carriage in order that it will not leave the track too soon. Finally, it is necessary that the acceleration of launching shall not be so great or so

violent as to injure the pilot who must ride in the plane and preserve all his senses alert in order to take charge as soon as he is released at the end of the run.

The development of a successful catapult to accomplish these desired things is believed to mark an important step in providing our fleet with aircraft, and with these turntable catapults which are relatively small and compact it is possible to provide the individual vessels of the fleet either with airplanes which can be launched from catapults when desired, and which will land upon an aircraft carrier when their mission is completed, or, alternatively, the warship may carry seaplanes which can be launched from the catapult in a similar manner, but which will land upon the surface of the sea and be hoisted aboard like a ship's boat. Until such time as the Navy is provided with a suitable number of aircraft carriers it will be necessary to use seaplanes for work with the fleet. Under many conditions the seaplane in its present state of development is entirely practical, although in very rough weather a landing upon the sea is likely to mean the damage, if not loss, of the seaplane, although it is to be expected that the aviator can be rescued. The conditions of the weather, however, are not believed to offer any inconvenience to launching by means of the catapult, and in time of war the commander in chief will launch his planes in the air, where they may accomplish their mission regardless of whether or not the planes may be salvaged intact upon their landing. In times of peace and on exercise work planes would not be launched from the fleet unless the sea is relatively moderate.

NOTE.—Articles dealing with previous naval development of catapults and photographs of former catapult installations, etc., may be found in the following references:

Aviation and Aircraft Journal, February 28, 1921. Page 278.
Aerial Age Weekly, November 15, 1915. Page 198.
Aerial Age Weekly, October 24, 1921. Page 163.
The Engineer, March 17, 1916. Page 242.

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